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Abstract

How do political views and social affiliations co-evolve? A long stream of research has focused on the relationship between political views and social affiliations, however, it is typically difficult to discern the causal relationship between views and affiliations. Here we use longitudinal attitudinal and whole network data collected at critical times (notably, at the inception of the system) to pinpoint and specify the determinants of attitudes and affiliations. We find significant conformity tendencies: individuals shift their political views toward the political views of their associates. This conformity is driven by social ties rather than task ties. We also find that, while individuals tend to associate with similar others, political views are notably less a basis for associational choices than demographic and institutional factors.

How people simultaneously construct and are molded by their social milieu is one of the foundational questions of social science. In the study of politics, this was the central question of Lazarsfeld and collaborators (Lazarsfeld et al. 1948, Berelson et al. 1954), and in more recent years Huckfeldt, Sprague, and colleagues (1987; Huckfeldt, Plutzer and Sprague 1993; Huckfeldt et. al. 1995; Huckfeldt, Johnson and Sprague 2002; 2004). The relationship between people's political views and their networks is a co-evolutionary, dynamic process. Views shape networks at the same time that networks shape views. This recursive evolution is a slippery subject for research, because in cross-sectional data it is difficult to disentangle the two processes of change. People who talk with each other may tend to become more similar in political views over time, but it is also clear that individuals seek similar others to talk with.

This co-evolutionary 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 talk with others, to what extent do 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 in this paper 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 structured environment for an extended period of time. We collected whole network data, and examined at the micro level how political attitudes and interpersonal relationships develop over time. These data allow us to address the questions: Throwing a set of individuals together with few or no prior relationships, what predicts the structure of the emergent network? How does this network, in turn, push and pull the political views of its constitutive individuals?

Our approach represents a significant advance, methodologically speaking. A 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 whole network, with longitudinal data collected at the inception of the social system, greatly reduces the merit of such a critique.

MEETING, MATING, INFLUENCE, AND ACCOMMODATION

Our approach also represents a significant advance on the conceptual level. There have been several robust threads of research on network formation and social influence within political science, sociology, and social psychology. Two key themes run through these literatures: homophily (the tendency for similar individuals to form ties) and social influence (the tendency for individuals who have ties to become more similar). We pull together these ideas into a unified framework, in which an individual (*ego*) seeks an accommodation between his/her views and the views of his/her discussion partners (*alters*). That accommodation is achieved by choosing similar alters with whom to talk, and/or adjusting attitudes to be in alignment with those of alters (cf. Balance Theory: Heider 1958; Newcomb 1961).

Network formation: Homophily

Following Verbrugge (1977), we conceive the emergence of social networks as a “meeting and mating” process. A variety of forces, both exogenous and endogenous, influence opportunities for people to meet and interact. These interactions create the opportunity for the formation of friendships or other forms of affiliation (“mating”).

One exogenous driver is similarity of an alter to self. Homophily is among the most robust findings in social science (for a thorough review, cf. McPherson, Smith-Lovin & Cook, 2001).¹ 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). This is partly the result of an opportunity structure where those with similar values are also more likely to meet one another. Spatial layout is another exogenous driver of the opportunity structure: interactions are likely to drop off exponentially

¹ The relevant metric of similarity varies by time and place. The fact that social networks in the US are segregated by race (Marsden, 1987) and not, for example, by left and right handedness, reflects the particular historical significance of race as compared to handedness in the US.

with distance (Allen 1977). For example, to the extent that residency is segregated by class, race, ethnicity, and the like (outside the choice of any single individual), and to the extent that these same factors are associated with (for example) political views, it is likely that individuals with similar political views will be grouped together.

Homophily is also the result of endogenous factors. Similar individuals tend to attract each other, and (contrary to many a romantic comedy) opposites tend to repel.² What Lazarsfeld and Merton observed anecdotally (1954: 31), later empirical findings confirmed. Given a choice, people will systematically choose those similar to themselves for relationships (Byrne 1971).

There are a number of processes likely underlying homophily. One is informational: similar others offer relevant information (Festinger 1954). For example, in seeking information about what movies to see, it is prudent to consult those with demonstrably similar taste. Another process is preferential: the social identity (Tajfel and Turner 1986) literature has focused on the consequences of in-group preference. Similar others are more likely to engage in cooperation, allowing the formation of stronger relationships (Buchan, Croson and Dawes 2002). Dissimilarity entails greater competition, making the formation of strong relationships less likely (Nebus 2006; Reagans 2005).

A third process underlying homophily is self-verification (Swann et. al. 2000), the notion that people yearn to be understood by others as they understand themselves. This encourages sorting that would reinforce such understanding. A fourth process underlying homophily 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.³ Importantly, such processes can operate outside of conscious awareness (Greenwald and Banaji 1995). This tendency toward

²There is a continuum between the exogenous and endogenous drivers of the tendency for similars to form relationships, as Schelling's (1978) classic work on segregation illustrates. Schelling found that weak preferences to be grouped with similar others leads to an opportunity structure where most individuals can communicate only with similar others.

³Note 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).

balanced relationships suggests that pairs of individuals who have consistent political orientations are relatively more likely to create and maintain relationships. These four processes provide the basis for our first hypothesis.

Hypothesis 1: Individuals tend to seek out similar others with whom to communicate.

The importance of social similarity is likely to vary depending on the type of tie. Networks are multiplex (Wasserman and Faust 1994) — i.e., people have many different types of ties with others (e.g., friendship, advice, mentorship). The determinants of one type of tie might be quite different from the determinants of another type of tie. Following from the work on cognitive balance, valenced relationships — relationships that are emotionally and personally important, such as friendship — we hypothesize, are especially likely to be characterized by homophily (e.g., Gibbons and Olk 2003; Lincoln and Miller 1979; Mollica, Gray and Trevino 2003; Aron et. al. 1992). Thus:

Hypothesis 2: The tendency to seek out similar others will be particularly pronounced in social friendship networks, relative to task-based networks.

As noted above, the opportunity structure for creating particular types of relationships makes a difference. For example, a liberal Democrat has fewer similar potential alters in Texas than Massachusetts. One outcome in such a scenario is that ego has to “settle” for relatively dissimilar alters. An alternative outcome is that ego will be relatively disengaged from his/her immediate milieu. For example, Newcomb (1943) found that in a relatively liberal milieu like Bennington College, conservative students had fewer ties than liberal students. Similarly, Finifter (1974) found that conservative union members had fewer attachments than liberal union members. These similar findings could be explained at the individual level by positing some intrinsic difference in the tie formation practices of liberal versus conservative individuals. A network-based or relational explanation is that those in the political minority of a social system will be relatively disengaged when faced with such an opportunity structure for relationships. Thus:

Hypothesis 3: In a majority liberal setting, conservatives will tend to be relatively less engaged in the network than liberals.

The configuration of an individual's friendships reflects some mix of the choices that individual makes (e.g., to talk with similar others), and factors exogenous to that individual (e.g., the types of individuals who happen to be near him/her). It is also likely, as discussed above, for the opportunity structure and endogenous choices to reinforce each other. Homophily notwithstanding, we know that our networks of political discussants are only imperfectly like us (Huckfeldt et. al. 2002; Mutz 2002), which, in turn, creates the possibility of social influence.⁴ This reflects, at least in part, the fact that the opportunity structure for forming relationships is often sharply constrained, e.g., as Mutz and Mondak (2006) explored in the context of political interactions in the workplace.

Network effects: Social Influence

Our networks, while dynamically evolving, are also simultaneously affecting us. The same vein of social psychology and sociology research from the 1940s and 1950s (Newcomb 1943; Lazarsfeld et. al. 1948; Festinger et al. 1950; Festinger 1954) also 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). There is also a parallel, but more micro and 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. The theoretical underpinnings of attitudinal change include cognitive balance (e.g., Frank and Fahrback 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 ego and his/her alter endogenous, but so is the attachment

⁴ There is some disagreement over the extent of homogeneity in our political discussion networks; e.g., compare Huckfeldt, Johnson, and Sprague (2004: 19), and Huckfeldt, Mendez, and Osborn (2004: 72) to Mutz (2006: 38).

between ego and his/her political views. Should liberal ego talk to conservative alter, they might not become friends (or sever an existing relationship), or they might become/stay friends and ego (or alter) might change his/her attachment to liberalism (or conservatism). 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..

Just as we anticipate homophily to be relatively more powerful with respect to friendship than to task-based ties, we expect social influence to be stronger on those with whom we have friendship ties (Kenny 1994). Exposure to a particular viewpoint from someone whom you like with will have a greater impact on your own opinion as compared to exposure to the same viewpoint from someone you work with. Thus:

Hypothesis 4: The political attitudes of people who have ties will tend to become more similar over time.

Hypothesis 5: Social influence around political attitudes will be especially powerful among people who are friends, versus among people who complete a task together.

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.⁵ 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

⁵ 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).

(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 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 vein of research through a longitudinal and more microscopic examination of social influence over time. Our research setting enables us to observe individuals’ political views before and after exposure to one another. Thanks to the setting, we know that initial political views are not the result of

interactions with the other participants in the study. We then examine whether subsequent interactions among participants contribute to changes in their political views.

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 come from two originally distinct studies of the same cohort of 164 public policy students entering a 2-year masters degree program. One study was longitudinal, surveying this cohort every semester of their program. This study provides our outcome variable: political attitude, measured at Time 1 (in the first couple of weeks of their first semester at school) and Time 3 (during the second semester of their first program year). A separate study surveyed the network structure of 161 members of this cohort⁶ at the beginning of the spring of their first year. This study provides the Time 2 data, collected in between the T1 and T3 surveys, at the beginning of the second semester.

We integrate student responses from the three surveys. The T1 political attitudes survey provided 126 valid responses from 164 surveys (a response rate of 77%). The T2 network survey provided 131 valid responses from 161 full-roster network surveys, a response rate of 81%. The T3 political attitudes survey provided 104 valid responses from the 126 (82.5%) surveys, a response rate of 82.5%. (In the longitudinal study, only students who completed the T1 survey were included in later surveys).

The T1 and T3 political views of students were assessed via a 7-point Likert-type scale. Students were asked to place themselves on the political spectrum ranging from “Extremely Liberal” (anchored at 1) to “Extremely Conservative” (anchored at 7).⁷ Using the T2 network survey data, we measured two types of network ties: dyads mutually identifying each other as getting together socially, and dyads mutually identifying each other as getting together for academic work. Questions covering basic demographic and individual background data (sex, race and religious affiliation) were included in the T1 survey. We also drew on institutional data regarding “section” assignment. The entire cohort of students was divided into three sections. Students in the same section took their “core” (required) classes together. Students were assigned to

⁶ The network survey was administered to only 161 of the initial 164 students because three students from the initial cohort did not take the required core spring semester class.

⁷ There were no extreme conservatives (7) observed in the sample.

sections using a stratified random assignment procedure which sought to achieve similar racial and gender compositions across the three sections. (See Appendix for tables and statistics showing that the sex, minority status and religious group distributions were similar across the three sections.)

The T2 instrument was a network roster survey, listing all students in that cohort by name, and asking subjects to check the name “if you discussed academics (outside of the classroom) with him/her this year” (task ties) and “if you got together with him/her for non-academic reasons this year” (social ties).

Ninety students completed all three surveys and could be matched by individual student. The effective response rate over all three data collection periods yields a sample comprising 55% of the cohort surveyed. Although 55% is the effective response rate for students whose responses could be matched across all three data collection periods, it is important to note that the response rate for the network survey alone exceeded the 80% response rate threshold commonly cited as necessary for generating useful network insights into network structure from full-network surveys (e.g., Sparrowe et. al. 2001: 319). There were no significant differences among any of the sub-samples along any social category dimensions (see appendix). The distribution of political attitudes did not change significantly between the two time periods.

Our study design presents an unusual opportunity to disentangle the influence effects of social similarity from those of social network ties. The T1 measure of political attitudes occurs at the inception of the system. The T1 measure provides a pre-exposure baseline score that is not likely to be meaningfully influenced by interactions within the social system. This is important, because it is likely that social systems are far more dynamic at their inception, and that in the long run people reach some type of accommodation between their network and attitudes somewhere short of perfect consonance between the two. That is, it is plausible that network effects may be significant, but observable only for a short period. The T2 social network data reveal relationships emerging after that baseline. The T3 measure captures any changes in the outcome of interest. Evidence for social influence on political views is found in the significance of the association between a measure of the T1 political views of students’ alters and their T3 political views, controlling for each individual student’s baseline political view as well as other individual and contextual effects. Any such significant

association would represent the best and most unambiguous evidence thus far for direct social influence on political attitudes.

We also conducted interviews with 26 of the students shortly after T3. While in this paper we focus on the quantitative analysis of the survey data, we present data from the qualitative analysis of the interviews when they help illuminate the processes underlying the quantitative results. The interview transcripts were analyzed in two stages, using the software program NVivo. First, all passages relating in any way to social interaction were identified and collected into a single file. Second, this text was coded line by line for references to the processes and content of social interactions, so that important themes and patterns could be identified across all interviews and among subgroups of respondents.

ANALYSIS

Figure 1 offers a graphic image of our data. The nodes represent individuals, and the lines connecting nodes represent relationships (social ties) among individuals. The shape of the node indicates which section the individual was assigned to (triangle = section 1, square = section 2, and circle = section 3). The shade of the node indicates the individual's initial political attitudes. Lighter nodes are more conservative and darker nodes are more liberal, with white and black nodes having the most extreme views. The size of the node reflects the direction of attitude change. Large shapes became more conservative, small shapes more liberal, and medium-sized nodes demonstrated no attitude change from T1 to T3.

[Figure 1 about here]

Our central questions, expressed in terms of the imagery in Figure 1, are as follows: 1) Is there segregation within the network based on political views? That is, are there more dark and more pale neighborhoods than one would expect by chance? 2) Is there unambiguous evidence of social influence on political views? That is, did individuals in the darker (more liberal) neighborhoods of the network become even more liberal (depicted as smaller in size), and individuals in the paler neighborhoods even more conservative (depicted as larger in size)? 3) Were these effects more pronounced for social networks than for task networks?

Social Influence

We first test for evidence that students influence one another's political views. The theory of network influence advanced by Huckfeldt and Sprague (1987) and their subsequent work with Johnson (2002; 2004) suggest that the views of one's alters in the aggregate are a potentially important source of network influence. Using the Time 2 network survey combined with the Time 1 survey of political views, we determined the Time 1 political views of all of ego's alters from both his/her social and task networks. Using these combined data, we constructed a set of two individual-level variables: (1) the mean Time 1 political view of ego's task-tied alters; and (2) the mean Time 1 political view of ego's socially-tied alters. The means, standard deviations, and correlations between these two variables along with ego's Time 1 and Time 3 political views are provided in the appendix.

Our initial tests for social influence on political views estimates whether ego's self-selected social environment is significantly associated with his/her Time 3 political view, controlling for his/her Time 1 political view (considered a pre-exposure measure of political view) and a set of demographic and institutional controls. Because our dependent variable in this analysis, student's Time 3 political attitudes, comes from responses to a 7-point Likert-type survey question, we use ordered logit regression models⁸ to estimate our regression coefficients and their standard errors (Agresti 2002). The results of these tests are presented in Table 1. In Table 1, Models 1 through 4 examine the determinants of Time 3 political view. We include Time 1 political view, which should capture any individual-level drivers of Time 1 political views. In these models, significant effects on the demographic category variables indicate that those groups are associated with changes in political views between Time 1 and Time 3. Model 1 shows significant associations for the sex variable, "men," and for the race/ethnicity category "Asian," suggesting that women and students identifying as Asian are more likely to become more conservative as compared to men and whites, respectively.⁹

[Table 1 about here]

⁸ Ordered regression models produce "cut-point" estimates for the transition between levels of the dependent variable. Because these cut-points are distinct for each model estimation, the magnitude of the estimated coefficients themselves are not meaningful when compared across models. Only the sign of the coefficients and their level of significance may be meaningfully compared across models.

⁹ As an additional test of the robustness of our findings, we replicated our analyses with Asians removed from the sample. There were no substantive changes to our social influence estimates. We also looked for significant differences in social influence between men and women, and found none. Analyses available upon request.

In Models 2 through 4 in Table 1, we add in the social influence indicators. The mean Time 1 political views of both task and social alters have positive significant effects on students' changing political views. The more conservative an ego's alters' Time 1 views are, the more conservative ego will be at Time 3. Similarly, the more liberal an ego's alters' Time 1 views are, the more liberal ego will be at Time 3. Although this relationship is true for alters in both task and social networks, Model 4 shows that it is the social network alters that are more influential. When terms for task network alters and social network alters are included in the same model (as in Model 4 in Table 3), only the mean T1 view of socially-tied alters remains a significant predictor of Time 3 views.¹⁰

These findings provide support for hypotheses 4 and 5. That is, we find strong and consistent evidence of a social influence effect on changes in political views. These effects are substantively quite large. Table 2 offers a summary of the size of these effects at around the mean of the various control variables, where the typical marginal effect of a single point change in average T1 attitude of T2 alters is associated with approximately a .6 to .8 point shift in ego's view by T3.

[Table 2 about here]

As an additional test that social ties are the key mechanism for attitude change, we divide the potential relational pathways of influence on an individual into three categories: (1) individuals to whom ego has a social tie; (2) individuals to whom ego has a task tie; and (3) individuals to whom ego has both social and task ties. Does having a task tie to someone in addition to a social tie increase his/her influence on ego? Table 3 duplicates the four models in Table 1, adding, as an independent variable, the mean views of individuals to whom ego has both academic and social ties.

[Table 3 about here]

The negative coefficient for dual ties in Model 4 in Table 3 indicates that the marginal effect of having a task tie in addition to a social tie with an individual is unlikely to be significantly positive. This suggests that, consistent with hypothesis 5, the pathway of influence on political attitudes is through social (rather than task) ties.

¹⁰ Although the mean T1 views of social and task alters are significantly correlated, the Variance Inflated Factors associated with Model 4 are 2.03 and 1.93, respectively. Both factors are well below the common threshold of 10 as an indicator of multicollinearity concerns (e.g., Myers 1990: 369).

The qualitative data suggest that students did regularly engage in policy-related discussion in which political differences emerged, but that these differences were often within a fairly narrow ideological band. As one student (self reported just left of center, a 3 on the 7-point scale) explained, “[I]n general there are both viewpoints, in terms of conservative and liberal at the school, but by and large they’re very liberal. And the same in this group. I definitely ended up being the more conservative side but by and large we were all very liberal.”¹¹

The interview data also suggest that the process of social influence on political views was subtle. No students reported that they underwent a major change in political attitudes. Several students made the point that, while their basic attitudes hadn’t changed, their general knowledge around policy had expanded (as one would hope). When asked whether she thought differently about political issues at the end of her first year, one student responded, “Probably not a lot differently, except that I know a lot more about them so I just have more opinions on them.”

Network formation

To test for political view homophily, we look for evidence that the ties measured at Time 2 are significantly associated with dyadic similarities in Time 1 political views. Figure 1 offers some hints as to the key drivers of the emergent network. There are clearly more ties within cohort (i.e., shape of node), while it is not so clear whether ties cluster by political preference (i.e., lightness or darkness). There is only a weakly significant correlation between ego’s T1 political views and the mean T1 political views of ego’s socially-tied alters (see appendix). Figure 2 plots the latter as a function of the former, showing no visibly strong association. If there were perfect ideological homophily (i.e., students talk only to students with the same political views), Figure 2 would be a line with a slope of 1. More generally, if there were significant attitude homophily, we would expect an obvious positive slope. Given the near-zero slope apparent in Figure 2, it is clear that if there is any political view homophily, it is weak at best.

[Figure 2 about here]

A second way to assess political view homophily is using network density measures. More specifically,

what is the ratio of actual ties to alters of the same political view to the total set of alters with the same political view (possible same-view ties)? How does this density compare to the density of differing-view ties (the actual-to-possible ratio)? In the absence of any homophily for a particular dimension of social similarity, the density of within-group ties would equal the density of between-group ties, and the odds ratio associated with these densities would be 1. Ratios above 1 would be consistent with homophily, and below 1 with heterophily. Table 4 presents these calculated densities and associated odds ratios, along with comparisons to the densities calculated for other known sources of homophily: sex, race, and religion (Marsden 1988) as well as section membership. As Table 4 shows, the odds of forming a tie with a person of the same political view are 1.2 times the odds of forming a tie with a person of a different political view, suggesting that there is a mild tendency toward political homophily. As with the correlation statistic, this finding is consistent with the presence of political view homophily, but these findings are only suggestive, not conclusive.

We cannot make a conclusive determination of political view homophily from these analyses because of two complications. The first complication is that correlation and density approaches consider one dimension of social similarity in turn while ignoring the others. This is a problem when there is homophily for a dimension that is also associated with T1 political views. Regressing T1 political views on sex, race, and religion reveals weakly significant associations within all three dimensions, and strongly significant associations for some religious groups (Jews and “Others” are significantly more liberal than the referent group of Protestants).¹² As Table 4 shows, race and religious homophily may be stronger than political view homophily. Because race and religion are significantly associated with both T1 view and the probability of a tie, it is possible that the apparent weak political view homophily derives from the combination of these two processes. We therefore turn to a multivariate analysis of tie formation.

[Table 4 about here]

A second complication in this multivariate analysis is that network data are generally interdependent, thus violating a fundamental assumption of common linear and least-squares statistical methods. What occurs with one dyad may affect other dyads. For example, it is a well-established finding in the study of social

¹² This analysis, also an ordered logistic regression, is available upon request.

networks (Wasserman and Faust 1994) that triads tend to be closed. In a social system of three people A, B, and C, if A is tied to B and B is tied to C, A and C are more likely to have a tie (to “close” the triangle) than in the system where B is absent. In addition, whenever such a “triangle” forms, the ties among A, B, and C are more likely to survive over time than ties in dyads without a third shared partner. (For a detailed discussion of both phenomena, see Krackhardt & Handcock [2007], and for interactions with homophily, see Louch [2000].)

In order to assess the level and significance of any political view homophily while taking into account simultaneous homophily effects for other dimensions of similarity as well as network structure (e.g., triad-level) effects, it is necessary to introduce methods that may be unfamiliar to this political science audience. In testing for associations between network properties and tie formation likelihoods, there are two classes of statistical approaches: the Multiple Regression Quadratic Assignment Procedure (MRQAP), and Exponential Random Graph Models (ERGM, also called “p*”). MRQAP is designed for testing the significance of the relationship between different dyad-level variables —e.g., comparing different networks, or whether (in the extant case) dyadic similarity along various dimensions predicts the presence of a relationship. ERGM allows testing for the presence of dyad-level associations, but also the presence of particular structural tendencies in the network (such as the tendency for triad closure). Here our primary objective is to examine the relationship between dyad-level variables (whether the similarity in Time 1 political views between two individuals is associated with the likelihood those two individuals share a tie at Time 2), so either method of estimation is appropriate. We therefore report our findings using both approaches.

The QAP approach (Krackhardt 1988) estimates regression model coefficients and then uses random permutations of the network data to generate a distribution of coefficient estimates from random networks with the same structure. The actual estimates are then compared with this generated distribution to test for significance. Improvements in this procedure have been made to ensure conservative estimation of standard errors across less-than-ideally structured data (Dekker, Krackhardt & Snijders 2007). We used the multiple regression version of QAP with these improvements as implemented in both UCINET (Borgatti, Everett & Freeman 2002) and the R package, “statnet” (Handcock et. al. 2003). Our QAP models include parameters for estimating the homophily effects of sex, race, religion, and section membership as well as political view

dissimilarities (using the absolute value of the difference between a pair of individuals' T1 political views) and the absolute political view of the dyad (using the sum of T1 political views of a pair of individuals as twice the mean view of the dyad).

The statistics of the ERGM approach (Holland & Leinhardt 1981; Snijders et. al. 2006) is summarized as follows (Goodreau et. al. 2008: 8). The probability of observing a set of network edges (and non-edges) is given by:

$$P(Y=y | X) = \frac{\exp[\theta^T g(y,X)]}{\sum_{y'} \exp[\theta^T g(y',X)]}$$

Where Y is a random set of edges and non-edges, y is a specific set of edges and non-edges, X is a matrix of attributes on the vertices, g(y, X) constitutes a vector of network statistics, θ is the vector of coefficients, and $\sum_{y'} \exp[\theta^T g(y',X)]$ is a constant that normalizes the term. The model can also be expressed equivalently as stipulating the log-odds that any edge will be present given holding constant the rest of the network configuration as:

$$\text{logit}(Y_{ij} = 1) = \theta^T \Delta g(y,X)_{ij}$$

Where Y_{ij} is a pair of actors in Y, and $\Delta g(y,X)_{ij}$ is the change in g(y,X) when y_{ij} moves from 0 to 1.

In addition to the terms in our MRQAP model, our ERGM must include individual-specific terms¹³ and terms to account for structural effects. There are a number of ways to model triad effects within an ERGM (Hunter 2007; Morris, Handcock & Hunter 2008). We used and report on 3 such approaches: (1) no triad terms, (2) a statistic for a count of triangles and a statistic for a count of “2-stars” (unclosed triangles), and (3) a statistic based on the number of edgewise shared partners of a dyad (Hunter 2007).¹⁴ In the absence of triad terms (i.e. approach [1]), the standard errors can be estimated directly. In the presence of triad terms, Markov Chain Monte Carlo (MCMC) estimation techniques are necessary. Table 5 reports our findings from our QAP and ERGM analyses.

¹³ QAP preserves the structure of the similarity-matrix predictors, which, in turn, preserves the representation of the different demographic categories and section composition. ERGM is based on random graphs, so composition terms must be explicitly represented for accurate estimates of homophily. (For example, in a system with two groups, mostly reds and a few greens, most ties will be red-red as a result of composition, not homophily.)

¹⁴ If A and C both have ties only to B, they have 1 edgewise shared partner. If A and C both have ties to B and D, they have 2 edgewise shared partners, and so on. Having more edgewise shared partners is likely to increase the likelihood of forming a tie, but this increase is unlikely to be linear. In our model, the effect is geometrically weighted with the weighting parameter – alpha – estimated directly from the data. As a result, this model has a term – GWESP – for the geometrically weighted edgewise shared partner, and an estimation of the weighting term – GWESP.alpha.

[Table 5 about here]

In these analyses, the key term of interest is the absolute value of the difference in Time 1 political views. This variable is a distance measure. The larger the value, the more dissimilar the individuals are in terms of political views. A negative coefficient on this variable would suggest that homophily in political views contributes to tie formation; the smaller the difference in political views between two people, the more likely they are to form a tie. A positive coefficient on this variable would suggest heterophily: dissimilar individuals are more likely to form ties. Among the models shown in Table 7 where significance levels could be estimated, all revealed the identical pattern of significance for the homophily-related terms: Similarities in section assignment, race, and religion are strongly associated with increases in the likelihood of having a tie at Time 2. Neither differences in Time 1 political views nor sex similarities were associated with tie probabilities. The sum of Time 1 political views had a significant negative association with tie probabilities. This means that the larger the dyadic sum of Time 1 political views (i.e., the more conservative the dyad), the less likely the dyad has a tie at Time 2. The smaller the dyadic sum of Time 1 political views (i.e., the more liberal the dyad), the more likely the dyad has a tie at Time 2. Figure 3 shows that even for the two ERG models for which significance levels could not be estimated, the pattern of estimated homophily-related coefficients are quite similar to the model where significance levels could be estimated.¹⁵

[Figure 3 about here]

Our analysis generated several surprising findings. Table 6 provides a substantive interpretation of our homophily findings by demonstrating how various differences affect relative tie probabilities. First, we find no evidence of political view homophily in social tie formation. We can see that even for a dyad with a difference in political views of 2 full points on a 7-point scale, the relative tie probability is comparable to that for an opposite sex dyad. (Our data show no significant homophily by sex.) We do not infer from this finding that political view homophily does not exist. Rather, political view similarity was not an important determinant of tie formation in this setting. Another surprise is the sheer magnitude of racial and religious homophily in this

¹⁵ If triad closure and survival amplify apparent homophily, we would expect the ERGM without triad terms to overestimate homophily effects. Thus, the triad terms should reduce the significance of homophily terms, making it highly unlikely that political attitude homophily would plausibly emerge as significant in these two models. Again, the QAP model estimates hold constant the structural properties of the network.

university, cosmopolitan setting. Two individuals who are the same race and religion are about eight times more likely to form a friendship than two individuals who are different on those two dimensions. A third surprise is the significant negative association between the dyadic sum of Time 1 political views and tie probability. We find evidence that liberals are more likely to form ties (and conservatives are less likely to form ties) in our setting. We examine this last finding in more detail below.

[Table 6 about here]

The interview data are consistent with the statistical finding of a powerful effect of section (and core course) assignment on social networks, and little tendency toward affiliations based on political viewpoint homophily. On the matter of racial and, to a lesser extent, religious homophily, the interview data offer a more nuanced understanding of the process of tie formation.

In describing the development of their social networks, students repeatedly referred to the impact of section membership. One described his network as “entirely cohort-based.” Another said of the section system, “I didn’t realize how much I would appreciate that.” A third noted that it was common practice in the beginning of the year for any student who was organizing a party to invite his/her entire cohort. One woman lamented not knowing students from other sections, but then joked, “I think it’s a myth that there are other people outside the beta [section]¹⁶” The process of meeting in core classes was reinforced through the many group assignments that students were given. As one person said of his group project, “I’m definitely much, much better friends with the four people I worked with because we had an exhilarating experience learning about this.” Another student alluded to the role of early study groups associated with the quantitative core classes, saying “I think some of us became friends by working together like in statistics or economics or that kind of thing, first semester. . . . through some of those groups is how I’ve got the friends that I’m closest to.”¹⁷

Students also alluded to participation in various clubs that cut across sections and programs, which enabled meeting others with similar interests or social identities., As one woman stated, “You name it, I did it... Women’s caucus, Jewish caucus, Democratic caucus, Campaigns and Elections [interest group]...” Although it is true that students might connect with politically similar classmates through some of these

¹⁶ Comments in brackets are not the speaker’s words but are inserted to make sense of a passage.

¹⁷ Ellipses indicate omitted text.

venues, it was extremely rare for students to describe making social connections on the basis of political affiliation. Only one student said her closest ties were to people “whose politics I respect.”

The interview data remind us that people do develop ties on the basis of shared elements of identity (such as race and religion), but that all of us possess multiple dimensions of social identity and their relative salience varies according to a number of factors, including social context. Thus, although several students commented on the racial homogeneity of their networks, others noted the fluidity of social identification. Speaking to the salience of race, one African American man commented that he found himself hanging out less with whites than he had in other settings, and observed, “I’ve been more uncomfortable in some places [social settings here] than I have been in the past. A couple of other people, two other people, two of my closest friends here said the same thing.” He suspected this was a result of being in a less racially balanced environment than what he had experienced elsewhere. One white student made a similar observation about his network, but offered a different possible explanation. Speaking of his close associates, he said,

But of that group, it's a very white group. I mean that's the first thing that comes to mind and I've commented to other people. I've had more homogenous friends here than I've had ever before. . . . I think partly it's similar interests. I think the people that I'm closest with are similar in their interests -- education policy and other domestic issues. And the people of color here are, at least some of my, I think most of my friends [of color] are more interested in international issues

At the same time, however, students also pointed out the influence of cross-cutting identities on affiliation, noting that racial or ethnic similarities did not always trump other dimensions of identity or interests. For example, an Asian American man explained that a Latino/Chicano friend

. . . was talking about his experiences with another person in his cohort who is from Mexico. And it seems like on paper they would have a lot in common. . . . this idea of a common ethnicity, a lot of shared cultural values. But the person from Mexico, (his) family is part of the ruling party. And my friend said he just can't have more than a surface conversation with this other person because they just have very little in common. Growing up in a very working class background in LA versus having all your needs catered to in Mexico City. . . . besides school, the commonalities ended.¹⁸

A Latino American man described the same division from the other side:

I was just speaking about the Latino community . . . Miguel, one of my best friends here in our cohort, is an interesting sort of bridge because he comes to the Latino Caucus meetings but, on this campus, he's Latin. And they're two very separate communities with no interaction. And the Latino Caucus is concerned about bilingual ed, immigration reform, welfare policy, healthcare, housing issues. . . . And so, through me . . . has, from the beginning, has come to these meetings and -- sort of like me, we sort

¹⁸ Words and spaces in parentheses are inaudible portions or tentative transcriptions.

of sit in back and we're more quiet, not the really involved people -- but they are definitely involved. He's also, of course, involved with the Latin community which has their own organization and they . . . can talk about different things . . . this group who -- so many went to British schools -- somewhere in South America, very wealthy families And they're here studying international trade and finance and they will go back to be a member of Congress and then an Ambassador, or do big business back home. They could care less about Proposition 187 in California or immigration reform at the border. These two groups do not interact at all.

A third student observed that on the small group level there was considerable “self-segregation,” but the basis for these affiliations wasn’t always the same dimension of identity:

I think it breaks down on a lot of different ones [dimensions] and it’s like people choose their one and then it’s kind of fixed.... It could be that you’re Hispanic or it could be that you’re gay or that it could be that you’re a woman or that you’re a black woman. You know, it could be any number of things. It could be you’re interested in a policy area.... And I think some people get around an issue and then around an ethnic or some other kind of social network.

Our data suggest that, while identity is in the eyes of the ego, social context can make some identities more salient than others. For example, a number of students spoke of the salience of race in their identities and their friendships, but no one referred to left- or right-handedness as a salient dimension of identity and their networks. In this university setting, handedness was not experienced as salient. The quantitative data capture the collective salience of particular dimensions of social identity, but at the individual level it is clear that an individual has many cross-cutting dimensions of identity.

Politics and Networking

Are there different levels of social network engagement across the political spectrum? Table 7 summarizes the relationship between political orientation and two measures of centrality: degree (the number of ties an individual has) and betweenness (the number of times an individual lies on the shortest path between all other pairs of individuals; see Freeman 1979).

[Table 7 about here]

Individuals on the left of the political spectrum are significantly more central ($p < .05$) by both measures of centrality. For example, they have 50% more ties than those on the right. There is no tendency for conservatives (5 or 6 on the Likert scale) to talk to each other. For example, the tie-density (the ratio of observed ties to all possible ties – a first-order estimate of tie probability) of conservative-conservative social ties is 6.8%, and task ties 5.7%, smaller than the tie-density of conservative-liberal ties, 7.1% (social) and 9.0% (task). As a point of comparison, the tie-density of liberal-liberal ties was 12.1% (social) and 12.8% (task). The

conservative minority, rather than banding together, connected less with each other and less with the network in general. This is a notable contrast to demographic minorities within the school, such as African Americans, Jews, and Hispanics, who generally did not have fewer ties, and had a tendency to form in-group ties.

This conservative disengagement could be a reaction to being a particular kind of minority, or could reflect some intrinsic difference about the social networking priorities and/or proclivities of liberals and conservatives. We have data to address the latter explanation from our Time 1 survey. Students were asked to identify their top 2 reasons from a list of 11 possible reasons for enrolling in that particular graduate school of public policy. One option was the “value of social connections for my career.” This variable was coded as either a 1 (among the student’s top 2 reasons) or 0. The mean was 0.18 and the standard deviation was 0.38 (n=119). Students were also asked to rank the top 3 ways from a list of 5 possible ways they expected the policy school to contribute to their professional lives. One option was “contacts – the people I meet at and through the school will be helpful to me in my future career.” This variable was coded as follows: 3 = most important way, 2 = 2nd most important way, 1 = 3rd most important way, 0 = either 4th or 5th in importance. The mean was 1.02, and the standard deviation was .90 (n=122). Correlations between these two variables and students’ Time 1 political views are -0.03 and 0.04, respectively. Neither correlation is significant. This ex post analysis does not support the conjecture that political view is associated with social networking attitudes or intentions.

The interview sample contained only four conservative students. Therefore, the qualitative data on conservative students’ experiences can merely suggest possibilities. One such possibility is based on the fact that two conservative students indicated that the people they were closest to were outside of the school. This suggests that conservative students might have worked harder than liberal students to maintain ideologically compatible ties outside of school. Unlike the aforementioned racial or ethnic minorities, conservatives are a *disproportionate* minority at the school. The proportion of conservatives outside of the school is much larger than within the school. As a result, conservative students may be “fishing” for ties in external networks, because these offer a more favorable ideological balance. A statement by another student hints at a related possibility:

[Q: If you want to raise a contrary position to what's being argued in class, how do you find that to be received?] "The teachers are usually ok with it, and the other people in the class, it seems that they're looking at you like you're a little bit strange. It's not like anybody's forcing you not to say something. It just seems like a lot of times people think, well this is opinion and everybody else would have that opinion and it would be wrong if you had a different opinion. Or... not just that your opinion would be wrong, but you would be wrong or you would be a bad person... if you thought that way."

This quote suggests that, when a student who is in an attitudinal minority experiences the normative environment as hegemonic or coercive, a coping mechanism might be to withdraw from social attachments that are perceived as optional.

DISCUSSION

This paper presents an approach to studying social influence and network formation that is novel within political science: studying a whole network over time, starting at the inception of the system. This approach offers a distinctive mix of advantages and disadvantages relative to the dominant egocentric approach to studying these phenomena. The primary disadvantage is that, by requiring a census of the population under study, this approach places a low cap on the size of that population. This necessarily creates concerns about generalizability because, narrowly speaking, the data offer no power for inference beyond this small population. The primary advantages are (1) broadly speaking, there is significant power to make inferences beyond the given population, because this is a study of people being influenced by real relationships (as compared to simulated relationships in a laboratory study); and (2) due to the sequence of data collection, the robustness of causal inferences regarding social influence and network formation significantly exceed what is possible with egocentric approaches.

Methodologically, this paper builds a bridge among three different traditions in the study of social influence: the controlled, laboratory experimental approach of psychology; the micro, whole-network tradition of sociology; and the macro, ego-centric network orientation of political science. Our findings are thus complementary to those of Huckfeldt, Sprague, and colleagues (1987; Huckfeldt, Plutzer and Sprague 1993; Huckfeldt et al. 1995; Huckfeldt, Johnson and Sprague 2002; 2004) regarding the power of social relationships in shaping politics, providing some of the micro-underpinnings of the processes that Huckfeldt et al. examine. From this union of traditions, literatures, and methodological approaches, we have crafted a demonstration of the importance of social influence in determining political attitudes. Furthermore, we introduced to the

political science literature two powerful methods for the statistical analysis of social network data: MRQAP and ERGM.

From a substantive perspective, we have provided the cleanest evidence for social influence affecting political attitudes in the political science literature. The research design accounts for the co-evolutionary complexities in assessing social influence. As a result, our findings are robust to concerns of selection and endogeneity, are not the result of measurement error. Alternative explanations for our finding of peer social influence on political views require processes that (we think implausibly) satisfy two criteria: (1) the process must be associated with changes in political views; (2) the process must push individuals toward the selection of alters that lean in the same direction that their political views *will* change.

We also found that the pathway to social influence seems to be through social rather than task-based ties. This is particularly notable in this population because political views were certainly conveyed through more task (academic) relationships. This suggests that persuasion is more a function of affect than information transfer.

We found only weak tendencies toward political homophily. By comparison, the effects of race, ethnicity, and religion on network formation were orders of magnitude larger. One might expect that politics would be a powerful social divide because of the high salience of politics in a policy school. Instead, what we found was that the political minority, rather than sticking together, essentially withdrew from the community. That is, rather than a “red-blue” divide within this population, there is a blue (majority) core and a red (minority) periphery. The relative peripherality of conservatives is consistent with previous studies where conservatives were in the minority (Finifter 1974; Newcomb 1943), although we do not find, as Finifter did, that the political conservatives tend to band together.

The magnitude of homophily with respect to race, ethnicity, and religion was a surprise. Our expectation was that in the immersive experience of professional school, with an ideology that emphasizes the value of diversity, and powerful institutional forces (such as assigned sections and assigned core courses) pushing dissimilar people together, race, ethnicity, and religion would not be such strong predictors of who

created ties with whom. Instead, we found patterns endemic in the broader society (e.g., Marsden 1987) replicated themselves in this microcosm.

How generalizable are our findings? Graduate school in public policy is a special milieu, with atypical characteristics. First, due to the application and admissions filters, it is especially homogeneous along a number of dimensions like academic achievement, class, and age. Second, the students are also far more left-of-center than most of the U.S. population. Third, given the nature of public policy school, politics are far more salient than in most social settings. Fourth, universities are a notably cosmopolitan and discursive setting. University students are expected to delve into controversial issues, to disagree and adapt, and to tolerate differences (Stouffer 1955).

Our study took place in a very particular setting, and one could argue that the particularities of the setting limit the generalizability of our findings. In response to such criticism, we argue that there exists no ideally generalizable setting for the study of social influence. Instead, we assert that society is made up of many diverse micro settings, which vary along dimensions that affect social influence processes. Indeed, much of the study of social capital focuses on the emergent outcomes from different micro-level processes of network evolution. For example, Bourdieu (1986) found that small ethnic minorities have a great in-group capacity to regulate behavior because of the difficulty of exiting that network. Similarly, we argue, social influence is an emergent property of micro-level processes governing the co-evolution of individuals and their attitudes. Two dimensions of this coevolutionary process our study helps illuminate are: the elasticity of the network (i.e., how much individuals choose who to talk with based on the relevant attribute subject to social influence), and the plasticity of nodes (i.e., how much individuals are typically affected by those that they talk with as compared to exogenous factors). Social influence can be understood as the result of the interplay of elasticity and plasticity. In this setting, elasticity was low -- people did not choose alters based on politics or factors that were powerfully related to political preferences. Plasticity was relatively high -- individuals were affected by their alters. The net result was significant social influence. However, if there had been higher levels of elasticity in

the network, even for the given level of plasticity, individuals would likely have evaded some social influence by choosing a set of alters similar to themselves.¹⁹

[Table 8 about here]

Different settings of interest to political science certainly vary along these dimensions of elasticity and plasticity, and it is likely that the macro patterns in the co-evolution of attitudes and networks associated with variations in these dimensions also differ. The conceptual challenges around connecting micro-level processes and macro-level outcomes have long been identified as a fundamental one in political science (cf. Eulau 1969; Schelling 1978). The approach we offer here provides a new approach to traversing the chasm between micro-level social processes underlying the attitudes of individuals and the macro-level patterns that result.

¹⁹ A key element is the relative time scale of change. If the network changes faster than attitudes, then the magnitude of social influence will be further attenuated. If attitudes change faster than the network, then individuals will be selecting alters after they have changed their attitudes.

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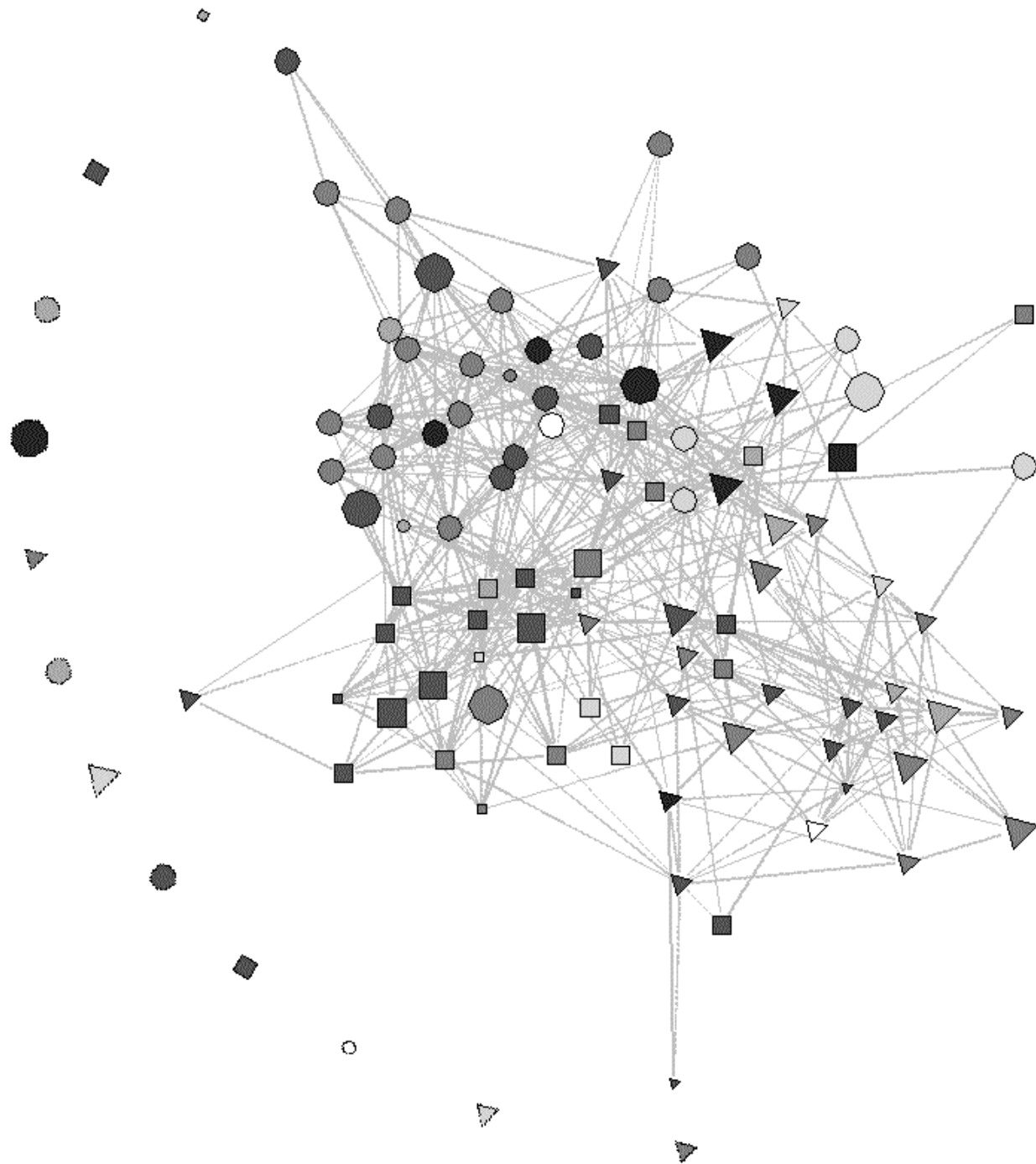
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Figure 1: Friendship network and policy orientations of students



triangle=section 1
square/diamond = section 2
circle/octagon = section 3

black = 1 (extremely liberal)
white = 6 (conservative)
with 4 levels of gray distinguishing
intermediate values.

largest= became more conservative,
smallest = became more liberal,
medium size=no change.

(For the purposes of this graph only, nodes with missing Time 3 political view are depicted as if they did not change their views – that is, depicted as having medium size.)

Table 1: Summary statistics for and correlations among political orientation variables.

	Mean	SD	N	1	2	3	4
1. T1 Political View	2.90	1.22	105	–	0.772***	0.047	0.181†
2. T3 Political View	3.09	1.24	90		–	0.241*	0.439***
3. Mean of Task alters' T1 views	2.76	0.39	96			–	0.587***
4. Mean of Social alters' T1 views	2.72	0.38	93				–

† $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 2: Ordered logit models predicting Time 3 political views based on demographic characteristics, section assignment, and Time 1 views of alters (standard errors in parentheses).

	Model 1	Model 2	Model 3	Model 4
Male	-1.27** (0.47)	-1.29* (0.52)	-1.37* (0.54)	-1.37* (0.55)
Religious Affiliation (Protestant is referent)				
Catholic	-1.21 (0.77)	-1.65* (0.84)	-1.48† (0.88)	-1.49† (0.88)
Jewish	-0.51 (0.71)	-0.58 (0.79)	-0.51 (0.81)	-0.51 (0.81)
Other	-0.71 (0.93)	-1.08 (0.96)	-0.41 (0.93)	-0.44 (0.95)
None	-0.89 (0.59)	-1.28† (0.66)	-1.18† (0.67)	-1.19† (0.67)
Race/Ethnicity (White is referent)				
Black	0.06 (0.85)	0.89 (0.98)	1.31 (1.05)	1.31 (1.05)
Latino/a	0.51 (1.06)	1.08 (1.32)	1.90 (1.41)	1.86 (1.43)
Native American	-1.24 (1.85)	-1.33 (1.95)	-1.11 (2.02)	-1.10 (2.02)
Asian	1.87* (0.73)	1.82* (0.87)	2.04* (0.84)	2.04* (0.85)
Other/Missing	-0.50 (0.83)	-0.55 (0.92)	-1.18 (0.96)	-1.17 (0.96)
Section (Section 3 is referent)				
Section 1	0.73 (0.52)	0.86 (0.58)	0.51 (0.58)	0.53 (0.59)
Section 2	-0.33 (0.59)	-0.36 (0.62)	-0.35 (0.65)	-0.34 (0.66)
Time 1 Political View	2.40*** (0.34)	2.59*** (0.39)	2.93*** (0.44)	2.92*** (0.44)
Mean of Academic Alters' T1 View		1.74** (0.67)		0.12 (0.89)
Mean of Social Alters' T1 View			3.16*** (0.76)	3.08** (0.98)
Cutpoints				
1 to 2	1.63	6.40	10.62	10.72
2 to 3	4.59	9.60	14.18	14.28
3 to 4	7.31	12.63	17.41	17.51
4 to 5	9.88	15.42	20.85	20.94
5 to 6	13.57	19.79	26.44	26.50
Log Likelihood	-89.0	-75.4	-68.6	-68.6
Pseudo-R ²	0.355	0.398	0.448	0.448

Table 3: Illustrative interpretation of social influence findings with actual data ranges indicated.

Ego's Time 1 Political View	Mean Time 1 View of Socially-Tied Alters						Data Range	
	1	2	3	4	5	6	Min	Max
1	1.01	1.14	1.73	2.54	3.38	4.24	2	3.29
2	1.14	1.73	2.54	3.38	4.23	4.96	1.5	3.29
3	1.73	2.53	3.38	4.23	4.96	5.59	2	3.5
4	2.53	3.38	4.23	4.96	5.58	5.95	2.36	3.31
5	3.38	4.23	4.96	5.58	5.95	6.00	2.38	3.83
6	4.23	4.95	5.58	5.95	6.00	6.00	2.45	2.78

NOTE: Table results are based on predicted estimates from the ordered logit regression model of the form:
 $T3 \text{ view} = f(T1 \text{ view}, \text{Mean of social alters' T1 view}, \text{Section dummies})$, i.e., Model 2 from Table 3 but ignoring demographic distinctiveness. The table also assumes the referent section, section 3.

Table 4: Testing social influence effects from alters with both social and task ties versus all task-tied and all socially-tied alters.

	Model 1	Model 2	Model 3	Model 4
Male	-1.25*	-1.25*	-1.44**	-1.42*
	(0.53)	(0.53)	(0.55)	(0.56)
Religious Affiliation (Protestant is referent)				
Catholic	-1.56†	-1.57†	-1.43	-1.44
	(0.85)	(0.85)	(0.89)	(0.89)
Jewish	-0.78	-0.77	-0.38	-0.30
	(0.80)	(0.80)	(0.82)	(0.83)
Other	-0.68	-0.73	-0.33	-0.47
	(0.93)	(0.95)	(0.93)	(0.95)
None	-1.11†	-1.12†	-1.19†	-1.24†
	(0.67)	(0.67)	(0.66)	(0.67)
Race/Ethnicity (White is referent)				
Black	1.13	1.14	1.27	1.28
	(1.02)	(1.02)	(1.06)	(1.06)
Latino/a	1.43	1.37	2.06	1.92
	(1.36)	(1.37)	(1.44)	(1.44)
Native American	-1.50	-1.47	-0.95	-0.78
	(1.96)	(1.97)	(2.03)	(2.04)
Asian	1.52†	1.55†	2.25*	2.43**
	(0.85)	(0.86)	(0.88)	(0.92)
Other/Missing	-0.91	-0.88	-1.21	-1.14
	(0.93)	(0.94)	(0.96)	(0.96)
Section (Section 3 is referent)				
Section 1	0.57	0.60	0.52	0.65
	(0.58)	(0.60)	(0.58)	(0.60)
Section 2	-0.56	-0.52	-0.21	-0.05
	(0.65)	(0.67)	(0.68)	(0.70)
Time 1 Political View	2.72***	2.72***	2.97***	2.98***
	(0.42)	(0.42)	(0.45)	(0.45)
Mean T1 View of Type (4) Dyad Alters	1.92**	1.74†	-0.97	-1.81
	(0.57)	(0.90)	(1.18)	(1.55)
Mean T1 View of Task Alters		0.27		0.99
		(1.10)		(0.89)
Mean T1 View of Social Alters			4.30**	4.61**
			(1.59)	(1.65)
Cutpoints				
1 to 2	6.95	7.23	11.22	12.53
2 to 3	10.25	10.53	14.81	16.19
3 to 4	13.31	13.61	18.05	19.45
4 to 5	16.49	16.77	21.52	22.87
5 to 6	21.44	21.66	27.25	28.42
Log Likelihood	-72.1	-72.0	-68.3	-67.9

Table 5: Table 6: Densities and Odds Ratios of ties within and between categories.

Grouping Category	Social Tie Density	Odds Ratio
<u>Political Views</u>		
Same View	11.7%	1.20
Different View (all)	9.9%	
Differ by 1	11.3%	
Differ by 2	9.4%	
Differ by 3	6.4%	
Differ by 4	10.2%	
Differ by 5	3.7%	
<u>Sex</u>		
Within-Group	10.7%	1.06
Between-Group	10.1%	
<u>Race</u>		
Within-Group	14.8%	2.28
Between-Group	7.1%	
<u>Religion</u>		
Within-Group	13.4%	1.48
Between-Group	9.4%	
<u>Section</u>		
Within-Group	21.3%	5.17
Between-Group	5.0%	

(Based on ties among 105 individuals, or 5460 dyads.)

Figure 2: Political view of ego plotted against average views of alters

