

Early Adolescents Demonstrate Peer-Network Homophily in Political Attitudes and Values



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Abstract

Research on political homophily has almost exclusively focused on adults, and little is known about whether political homophily is present early in life when political attitudes are forming and friendship networks are rapidly changing. We examined political homophily using a social network approach with rural middle school students ($N = 213$; mean age = 12.5 years; 57% female) from a remote U.S. community. Preregistered analyses indicated that early adolescents were more likely to spend time with people who shared similar political attitudes and values. These effects were most consistent for right-wing authoritarianism, patriotism, and anti-immigration attitudes. Our results show that political homophily is evident at an early age when young people are forming their political beliefs and making decisions about their friendships, suggesting that peer political-attitude socialization may emerge early in life.

Keywords

network analysis, politics, early adolescence, political development, open data, open materials, preregistered

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Political homophily represents the tendency for people to affiliate with others who share similar political beliefs. Homophily is a product of socialization and represents a normative process by which people form social attitudes (McPherson et al., 2001). Research on political homophily has almost exclusively focused on adulthood, a time when friendships and political attitudes are relatively stable (Krosnick, 1991). This research has relied on adults' reports of their peers' political attitudes, examined homophily among romantic partners, or examined homophily in the context of social media (Colleoni et al., 2014; Huber & Malhotra, 2017; Huckfeldt & Sprague, 1995). Less is known about whether political homophily is present earlier in life when young people are making decisions about friendships and are beginning to form attitudes about political issues (Hooghe & Wilkenfeld, 2008). The goal of the present study was to use social network methodology and a preregistered analytic plan to examine political homophily among a near-complete peer network of early adolescents. Examining political homophily among early adolescents will contribute to research on

civic development by providing novel insight into the processes that shape political attitudes and the possible implications of political attitudes for youths' social lives.

Early adolescence is the developmental period between 10 and 15 years and represents an ideal time to examine the emergence of political homophily. During early adolescence, youths experience substantial growth in abstract reasoning and perspective taking (Van der Graaff et al., 2014), which contribute to the development and reevaluation of political attitudes and values (Mooijman & Stern, 2016). Increases in abstract reasoning ability allow adolescents to question the legitimacy of authority (Oosterhoff et al., 2017), to evaluate group-based social hierarchy (Godfrey et al., 2019), and to form more complex beliefs about political issues (Flanagan et al., 2014). During this time, youths are also introduced to a more nuanced social studies

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curriculum that often entails greater discussion of political events (L. Ho et al., 2017). Expanding autonomy during early adolescence further leads youths to prioritize, evaluate, and reassess peer relationships (Steinberg & Monahan, 2007) while also relying on peers for social support and social information (Stewart & Suldo, 2011). During early adolescence, social relationships begin to inform group-based identities (Rubin et al., 2006) as youths start to evaluate whether the values of their peer group reflect their personal ideals (Killen et al., 2013). Early adolescence is therefore a time when political attitudes and values should become more relevant when making decisions about peer relationships and when peers may have a stronger influence on personal attitudes and values, both of which may contribute to political homophily.

Social network methodologies (Luke, 2015) may be particularly useful for examining political homophily among early adolescents. Social network methodology is capable of directly examining political homophily by testing whether similarities in political attitudes predict the likelihood that a connection (or “tie”) exists between two people. Social network analysis among middle school students has demonstrated that friends tend to be more similar than nonfriends in levels of delinquency (Xie et al., 2006), motivation and achievement (Ryan, 2001), depression (Van Zalk et al., 2010), personality (Ilmarinen et al., 2017), and illegal political behavior (e.g., painting political graffiti on walls; Dahl & van Zalk, 2014). Youths also tend to be friends with peers who share similar sociocultural characteristics such as age, gender, race, and ethnicity (McPherson et al., 2001). One study found evidence that high school students demonstrate peer homophily in their religious beliefs (Cheadle & Schwadel, 2012), which may have implications for political values such as right-wing authoritarianism (RWA; Hunsberger, 1995). It is currently unknown whether early adolescent peers are similar in their emerging political attitudes and values, which may shape how young people develop political identities into adulthood.

Examining political homophily in early adolescent peer networks requires certain methodological considerations. Social network research often uses either an egocentric or a whole-network approach. Egocentric network techniques have youths report on their own personal qualities and the qualities of their peers, which has limited internal validity because youths’ report of their peers’ attitudes and behavior are often inaccurate. In contrast, whole-network approaches assess all youths within a network (e.g., school) and ties between youths (e.g., friendships). These approaches have greater internal validity because they do not rely on adolescents’ knowledge of their peers’ qualities. Whole-network

Statement of Relevance

Political homophily—or the tendency for people to affiliate with others who share their own political beliefs—is a normative social process that may contribute to the formation of political attitudes and values. Little is known about the developmental roots of political homophily and whether this tendency is present early in life. Integrating research on political science and developmental psychology, this study used a network-based approach to examine political homophily during early adolescence when youths are both forming their political attitudes and making decisions about friendships. Findings indicate that early adolescents are more likely to spend time with peers who share similar political attitudes and values. These results highlight the importance of considering early social relationships when seeking to understand the origins of political attitudes and values.

approaches require that the majority of peers within a network complete the same assessment, which is logistically challenging given that the size and location of an entire peer network are often unknown. One way to address this challenge is to examine peer networks within schools in more remote geographic regions. Similar-age youths within remote communities often attend the same school, which increases the ability to assess the majority of youths’ peer network. This approach also provides a methodological control for variation in social challenges faced by different types of communities that may produce differences in political attitudes (Hope & Spencer, 2017). The current study used a community-based participatory-research approach to examine adolescents’ social networks within the only available public middle school centrally located in a county greater than 5,000 square miles.

The purpose of this study was to integrate research on developmental and political psychology to test political homophily during early adolescence, when peer social ties are changing and political attitudes are emerging. Our preregistered hypotheses were that early adolescents would demonstrate peer homophily in political values and attitudes and that similarities in political attitudes and values would predict a greater likelihood that early adolescents would have a peer-nomination tie. All data, analysis scripts, and materials needed to computationally reproduce or conduct a direct replication of this study are available on OSF (<https://osf.io/4tgxy/>).

Method

Participants

Participants were recruited through a local middle school in the northwest United States in Fall 2019. The middle school served 250 students at the time of data collection. An a priori minimum sample size of 200 was selected because this threshold represents 80% of the student body and is capable of detecting a small to medium effect size ($\beta = 0.15\text{--}0.20$) at 80% power assuming an α of .05. The survey was completed by 216 middle school students in Grades 6 through 8 (age: $M = 12.5$ years, range = 11–15 years); most students (95%) were between the ages of 12 and 14 years. Three students were removed because of missing data on peer nominations, which resulted in a final analytic sample of 213. Thus, the sample size of 213 participants represented 85% of eligible participants. Participants self-selected into the study and were asked to complete a 45-min survey during a class period.

Consistent with past research collecting social network data with middle school students in the United States (Andrews et al., 2016; Kornienko et al., 2016), the current study used an opt-out consent procedure with active student assent. This strategy was chosen because missing data on peer ties render social network data unusable (Burt, 1987). Consent letters were sent to parents who were given the option of opting their child out of participation in the study. Students provided active assent. During data collection, students were reminded that they could skip any questions they did not want to answer and refuse to participate at any time without penalty. The study protocol, procedure, and questionnaire were reviewed and approved by a community advisory board (CAB) composed of students, community members, parents, and school administrators from the local area including teachers, the superintendent, and the principal of the middle school. This study protocol received approval by the institutional review board at Montana State University.

Measures

Peer-network characterization. Participants were provided with the option to identify up to seven students within the school with whom they spend the most time by selecting names from an electronic prepopulated list. To capture school-level networks, we allowed participants to nominate any student within the school regardless of classroom or age. If students did not spend time with up to seven other students, they were instructed to leave the remaining spaces blank. Any nominations made of nonparticipating students were converted to a missing

code, and these data were not used. Past research suggests that homophily is more likely when nominations are shared among peers (Luke, 2015). Thus, only connections in which nominations were reciprocated (i.e., both adolescents nominated each other) were retained for the analysis.

Political attitude and value selection. The process of homophily is thought to occur through socialization, which assumes that the specific attitudes and values tested are relevant to the population studied. To help meet this assumption, we convened the CAB to identify political issues relevant to their community. On the basis of meetings with the CAB, six political attitudes were identified: environmentalism, anti-immigration, personal and structural attributions for poverty, and support for Obama and Trump. Discussions from the CAB also resulted in identifying three sociopolitical values that members felt were relevant to their community: RWA, social dominance orientation (SDO), and patriotism. Thus, the focus of this study concerned peer homophily in sociopolitical values (RWA, SDO, patriotism) and specific political attitudes (environmentalism, anti-immigration, personal and structural attributions for poverty, and support for Obama and Trump).

Right-wing authoritarianism. RWA was measured with six items adapted from prior research (Bizumic & Duckitt, 2018). These items were selected on the basis of their suitability for early adolescent samples (Metzger et al., 2014) and included two items from the conservatism subscale (i.e., “It’s great that many young people today are prepared to follow authority” and “What our country needs most is discipline, with everyone following our leaders”), two items from the traditionalism subscale (i.e., “The old-fashioned ways and old-fashioned values still show the best way to live” and “It is important that we keep our traditional values”), and two items from the authoritarianism subscale (i.e., “We need tougher government and stricter laws” and “We have to crack down harder on troublemakers if we are going to preserve law and order”). A total mean score was calculated across items ($\omega = .64$); higher values indicated greater RWA.

Social dominance orientation. SDO was measured with eight items adapted from prior research (A. K. Ho et al., 2015). As with RWA, we selected these items on the basis of their suitability for early adolescent samples (Metzger et al., 2014) and included five items from the dominance subscale (e.g., “Some groups of people are simply not as good as other groups,” “No one group of people should lead in society,” “In a good society, some groups tend to be on top and others tend to be on the

bottom, groups at the bottom are just as deserving as groups at the top,” and “We should try to make all groups equal”) and three items from the anti-egalitarianism subscale (i.e., “Group equality should be our primary goal,” “It is not right to try to make groups equal,” and “We should work to give all groups of people an equal chance in life”). Reverse-scored items were recoded, and a total mean score was calculated across items ($\omega = .78$); higher values indicated greater SDO.

Patriotism. Patriotism was measured with four items adapted from prior research on adolescents (Metzger et al., 2014). These items were “America is a better country than most others,” “I am proud to be an American,” “The fact that I am an American is an important part of who I am,” and “Although at times I may disagree with the government, my commitment to America remains strong.” Items were rated on a 6-point scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). Mean scores were calculated ($\omega = .86$); higher values indicated greater patriotism.

Environmentalism. Environmentalism was measured with two items: “This country has gone too far in its efforts to protect the environment” and “Stricter environmental laws and regulations are worth the cost.” These items were rated on a 6-point scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). Mean scores were calculated ($r = .35$); higher values indicated greater environmentalism.

Anti-immigration attitudes. Anti-immigration attitudes were measured with two items: “The growing number of newcomers from other countries threaten traditional American customs and values” and “Immigrants today strengthen our country because of their hard work and talents.” These items were rated on a 6-point scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). Mean scores were calculated ($r = .44$); higher values indicated greater anti-immigration attitudes.

Personal attributions for poverty. Personal attributions for poverty were measured with two items: “People are poor because they are lazy and don’t want to work hard” and “People are poor because they do not have the ambition.” These items were rated on a 6-point scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). Mean scores were calculated ($r = .57$); higher values indicated greater personal attributions for poverty.

Structural attributions for poverty. Structural attributions for poverty were measured with two items: “People are poor because there is no work” and “People are poor because not everyone receives the same skills or training

when they are young.” These items were rated on a 6-point scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). Mean scores were calculated ($r = .32$); higher values indicated greater structural attributions for poverty.

Attitudes about Obama and Trump. Attitudes about Obama and Trump were measured using two separate items (“In general, how do you feel about President Donald Trump?” and “In general, how do you feel about former President Barack Obama?”). Item responses were given on a 5-point scale ranging from 1 (*very bad*) to 5 (*very good*); an “I don’t know” option was provided and treated as missing data. Items were modeled separately.

Demographic characteristics. Participants reported their grade, gender, parents’ education, race, and ethnicity. Participant race was coded 1 for White or 2 for non-White, and ethnicity was coded 1 for non-Hispanic or 2 for Hispanic. Parents’ education was recoded on a 3-point scale: 1 (*neither parent completed high school*), 2 (*at least one parent completed high school*), and 3 (*at least one parent completed college*). Youths also reported on whether their families had difficulty buying things they wanted or needed as a proxy for family financial status (Galinsky, 1999); higher values indicated greater financial status.

Analytic technique

Preregistered analyses. Our analysis plan was preregistered at <https://osf.io/jdtvs/> and was similar to that used for cross-sectional analyses by Schaefer et al. (2011). Preregistration occurred after data collection was complete. At the time of preregistration, only the raw sample size of the study was known, to ensure adequate coverage of the peer network. No other aspects of the data were known by the research team prior to preregistration.

Exponential random-graph modeling (ERGM) was used to examine political value and attitude homophily among adolescent peer networks using the *statnet* package in R (Version 2019.6; Goodreau et al., 2008). An undirected network was estimated using the “strong” network-edge rule where only reciprocal nominations are modeled. We chose to model only reciprocal nominations given that homophily is more likely when both youths perceive a tie (compared with when only one youth perceives a tie; Luke, 2015). Two primary models were used to answer the study questions. For the first model, political values (RWA, SDO, patriotism) were entered using the *absdiff* function following the covariates. The *absdiff* function is used when the independent variable is continuous; it calculates the absolute difference between peers on a given quality (e.g., RWA) and tests whether this difference is associated with the

likelihood of a tie between peers. Lower absolute-difference values indicate greater similarities on that quality. Political homophily is therefore indicated by a significant negative association between the absolute difference on a specific value or attitude and the likelihood of a tie between peers. The second model was similar to the first but with political attitudes (environmentalism, immigration, personal and structural attributions for poverty, attitudes about Trump and Obama) entered using the *absdiff* function after adjusting for political values and covariates.

All models were adjusted for the following covariates: grade, gender, parents' education, financial status, and race/ethnicity. Gender, grade, race, and ethnicity were modeled as categorical variables using the *nodematch* function in *statnet*; greater values indicated more homophily. Parents' education and financial status were modeled continuously using the *absdiff* function; lower values indicated greater homophily. One advantage of ERGMs is the ability to model and control for network structural properties that have a strong effect on whether a tie exists between two individuals in the network, including connection probability, connection skew, closed triangles, and open triangles (see Luke, 2015). Estimation of these characteristics depends on the network itself and, if misspecified, can produce a degenerated model in Markov chain Monte Carlo (MCMC) estimation. Following the methodology of Luke (2015) and Goodreau et al. (2008), we used these parameters to improve the model until a model with good fit was identified, which was determined by the graphical inspection of the goodness-of-fit function. A technical description of the ERGM network-properties specification process along with the resulting goodness-of-fit plots can be found in the Supplemental Material available online.

Non-preregistered analyses. Three sets of non-preregistered analyses were performed as robustness checks and to help contextualize effect sizes from the preregistered analyses. First, both RWA and SDO have validated subscales; thus, examining these constructs beyond their unidimensional total scores may provide greater conceptual specificity. We therefore conducted supplemental analyses in which we estimated similar models to our primary hypotheses but with subscales for RWA (authoritarianism, traditionalism, conservatism) and SDO (anti-egalitarianism, dominance) estimated as separate predictors.

Second, ERGMs are the gold-standard method for examining peer homophily using social network methodology because of their ability to directly model network characteristics that alter the likelihood of a peer connection. The estimates provided by ERGMs can be interpreted as the change in odds of a network connection existing at varying levels of differences between

peers on a specified independent variable. These estimates are robust and informative but can also be unintuitive. Thus, supplemental analyses were performed to provide an alternative contextualization of peer similarities for the significant effects found in the primary models. Specifically, we used repeated measures *t* tests to compare youths' average deviation from their peers' attitudes (peer-mean centered) with their average deviation from the overall mean (grand-mean centered) for significant effects found in the ERGMs.

Third, although political values and attitudes are distinct, there is considerable analytic overlap between these constructs among adults (Duckitt & Sibley, 2009). To help ensure that significant findings were not due to multicollinearity or suppression, we conducted our preregistered analytic plan in two phases, with separate models examining political values in isolation and along with political attitudes. This approach provided a sensitivity analysis for whether inferences regarding political values were susceptible to suppression but did not provide similar information for inferences regarding political attitudes. Therefore, an additional model was estimated that included only the political attitude measures and covariates.

Missing data. Low levels of missing data on demographic characteristics or covariates (< 5%; parents' education: 14%) were estimated using multiple imputation and the *MICE* package (Version 3.14.0; van Buuren & Groothuis-Oudshoorn, 2011). No network data were imputed.

Results

Adolescents' undirected reciprocated peer network was characterized by 213 nodes (early adolescents) and 782 edges or ties between nodes. On average, youths nominated about five (out of a possible seven) peers and were nominated by an average of five others. Youths had an average of about three reciprocated ties. Table 1 displays the descriptive statistics and bivariate correlations among political values and attitudes. Adolescents' sociopolitical values were generally positively correlated with one another ($r_s = .15-.36$), and political attitudes were generally positively correlated with one another ($r_s = .11-.53$). Further, most sociopolitical values were positively correlated with political attitudes ($r_s = .02-.39$).

Preregistered tests of early adolescent peer-network homophily

Two ERGM models were estimated to test our preregistered analyses. Consistent with past research (Schaefer et al., 2011), iterative specifications of the network

Table 1. Means, Standard Deviations, and Correlations for All Study Variables

Variable	<i>M</i>	<i>SD</i>	Correlations													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Gender	1.54	0.50														
2. Grade	2.04	0.81	.08													
3. Race: White	0.86	0.35	.22**													
4. Ethnicity	1.09	0.29	.02	.00												
5. Financial status	2.76	0.75	.10	-.16*	.07	.03										
6. Parents' education	2.61	0.70	-.03	-.10	.20**	-.11	.39**									
7. RWA	3.90	0.70	-.10	-.09	.08	-.13	.17*	.06								
8. SDO	2.83	1.00	-.20**	.09	-.08	.03	.05	.01	.25**							
9. Patriotism	4.81	0.96	.03	.03	.26**	-.16*	.26**	.27**	.36**	.15*						
10. Environmentalism	4.39	1.09	.15*	-.03	.04	-.02	.14*	.18**	.06	-.13	.02					
11. Anti-immigration attitudes	4.03	1.12	.07	.00	-.06	.08	-.12	-.08	-.26**	-.38**	-.29**	.17*				
12. PAP	3.10	1.32	-.08	-.03	.07	-.05	.23**	.11	.30**	.27**	.35**	-.13	-.39**			
13. SAP	3.47	1.05	.05	.07	-.06	.01	.00	.18**	-.15*	-.25**	-.08	.15*	.11	-.26**		
14. Trump	3.01	1.35	-.09	-.00	.09	-.04	.06	.08	.24**	.22**	.39**	-.13	-.40**	.43**	-.20**	
15. Obama	3.42	1.24	-.04	-.13*	-.01	.08	-.15*	-.02	-.13	-.29**	-.32**	.17*	.27**	-.37**	.23**	-.53**

Note: RWA = right-wing authoritarianism; SDO = social dominance orientation; PAP = personal attributions for poverty; SAP = social attributions for poverty.
 * $p < .05$. ** $p < .01$.

properties indicate that inclusion of connection probability, connection skew, and edgewise-shared partnerships that account for no connections, one shared partnership, open triangles, and closed triangles allows MCMC estimates to provide a goodness of fit that represents the observed data (see the Supplemental Material). Thus, these network structural properties were included as covariates in all subsequent analyses. Table 2 displays estimates from these models. The first model examined early adolescent peer homophily in sociopolitical values (RWA, SDO, patriotism). Adolescents with similar genders, those who were in the same grade, those with similar levels of financial strain, and those with similar levels of parents' education were more likely to have reciprocated nominations relative to those who differed in these qualities. After accounting for gender, grade, financial strain, parents' education, race, ethnicity, and network structural properties, we found that lower absolute differences in RWA and patriotism were significantly associated with a greater likelihood of having a peer-nomination tie (Fig. 1). With each unit of similarity in RWA, early adolescent peers had a 14% greater likelihood of having a shared nomination. With each unit of similarity in patriotism, early adolescent peers had an 18% greater likelihood of having a shared nomination.

A second ERGM examined early adolescent peer homophily in sociopolitical attitudes (environmentalism, anti-immigration attitudes, personal attributions for poverty, structural attributions for poverty, support for Trump and Obama) after accounting for network structural properties, demographic covariates, and sociopolitical values. Table 2 displays the model estimates. Adolescents with similar genders, those who were in the same grade, those with similar levels of financial strain, and those with similar levels of parents' education were more likely to have reciprocated nominations relative to those who differed in these qualities. Consistent with our first model, the second model showed that lower absolute differences in RWA and patriotism were significantly associated with a greater likelihood of having a peer-nomination tie. Additionally, a lower absolute difference in anti-immigration attitudes was significantly associated with a greater likelihood of having a peer-nomination tie (Fig. 1). With each unit of similarity in anti-immigration attitudes, early adolescent peers had a 9% greater likelihood of having a shared nomination.

Non-preregistered analyses

Modeling subscales. A second series of ERGMs was conducted in which the subscales for RWA and SDO were estimated separately. Bivariate correlations indicate

that the subscales for RWA ($r_s = .13-.40$) and SDO ($r = .57$) were moderately correlated. Model statistics are presented in Table 3. When the subscales were estimated separately and after network properties and demographic characteristics were accounted for, lower absolute differences in RWA authoritarianism and traditionalism were significantly associated with a greater likelihood of having a peer-nomination tie. With each unit of similarity in the RWA authoritarianism subscale, early adolescent peers had a 9% greater likelihood of having a shared nomination, and with each unit of similarity in the RWA traditionalism subscale, early adolescent peers had a 10% greater likelihood of having a shared nomination. The absolute difference of both subscales for SDO was nonsignificant. These findings were similar when we examined values and attitudes simultaneously (Table 3), although the effect for RWA authoritarianism became nonsignificant ($p = .06$).

Additional contextualization of effect sizes. Repeated measures t tests comparing youths' average deviation from their peers' attitudes (peer-mean centered) with their average deviation from the overall mean (grand-mean centered) were estimated among significant effects found in the ERGMs (RWA, patriotism, and anti-immigration attitudes) to further contextualize these results. Figure 2 and Table 4 display the estimates from these models. The average grand-mean deviation for RWA was 0.56, compared with an average peer-mean deviation of 0.29. When examining the authoritarianism and traditionalism subscales separately, we found that the average grand-mean deviation for the RWA authoritarianism subscale was 0.78 and for the RWA traditionalism subscale was 0.78, compared with an average peer-mean deviation of 0.38 and 0.38, respectively. The average grand-mean deviation for patriotism was 0.72, compared with an average peer-mean deviation of 0.42. The average grand-mean deviation for anti-immigration attitudes was 0.88, compared with an average peer-mean deviation of 0.46. All mean comparisons were statistically significant ($p < .001$). These findings indicate that, on average, youths' RWA, patriotism, and anti-immigration attitudes are roughly twice as similar to those of their nominated peers relative to their schoolwide average.

Modeling political attitudes without values. A final ERGM was conducted in which only network properties, demographic covariates, and political attitudes were entered as predictors. Model estimates are displayed in Table S1 in the Supplemental Material. Consistent with our preregistered analyses, results showed that a lower absolute difference in anti-immigration attitudes was associated with a greater likelihood of having a peer-nomination tie (odds ratio [OR] = 0.93, $SE = 0.04$, $p = .05$).

Table 2. Results From Preregistered Exponential Random-Graph Models for Sociopolitical Values and Attitudes

Variable	Values only				Values and attitudes			
	OR	SE	p	95% CI	OR	SE	p	95% CI
Network properties								
Connection probability	0.00	0.26	.00	[0.00, 0.01]	0.00	0.26	.00	[0.00, 0.01]
No edgewise-shared partners	0.08	0.11	.00	[0.06, 0.10]	0.08	0.11	.00	[0.06, 0.10]
One edgewise-shared partner	0.17	0.08	.00	[0.15, 0.20]	0.17	0.08	.00	[0.15, 0.20]
Open triangles	0.33	0.07	.00	[0.29, 0.38]	0.33	0.07	.00	[0.29, 0.38]
Closed triangles	0.51	0.08	.00	[0.43, 0.60]	0.51	0.08	.00	[0.43, 0.60]
Connection skew	72.92	0.32	.00	[39.14, 135.83]	79.47	0.32	.00	[42.69, 147.94]
Demographic covariates								
Gender	1.94	0.05	.00	[1.74, 2.16]	1.94	0.05	.00	[1.74, 2.16]
Grade	7.23	0.17	.00	[5.15, 10.16]	7.24	0.17	.00	[5.16, 10.16]
Race: White	1.08	0.09	.42	[0.90, 1.30]	1.09	0.09	.36	[0.91, 1.31]
Ethnicity	1.11	0.11	.34	[0.90, 1.37]	1.14	0.11	.24	[0.92, 1.41]
Financial status	0.81	0.05	.00	[0.73, 0.89]	0.81	0.05	.00	[0.74, 0.89]
Parents' education	0.84	0.05	.00	[0.76, 0.93]	0.83	0.05	.00	[0.75, 0.91]
Sociopolitical values								
RWA	0.86	0.06	.02	[0.75, 0.97]	0.87	0.07	.04	[0.77, 0.99]
SDO	1.04	0.05	.36	[0.95, 1.14]	1.07	0.05	.17	[0.97, 1.17]
Patriotism	0.82	0.05	.00	[0.75, 0.90]	0.84	0.05	.00	[0.77, 0.93]
Political attitudes								
Environmentalism					0.97	0.04	.47	[0.90, 1.05]
Anti-immigration					0.91	0.04	.02	[0.85, 0.99]
Personal attributions for poverty					0.97	0.04	.42	[0.91, 1.04]
Social attributions for poverty					1.05	0.04	.26	[0.96, 1.15]
Support Trump					0.95	0.03	.16	[0.89, 1.02]
Support Obama					0.95	0.04	.17	[0.88, 1.02]

Note: Values in boldface are significant primary effects ($p < .05$). Gender, grade, race, and ethnicity were modeled categorically and entered using the *nodematch* function in the *statnet* package in R (Version 2019.6; Goodreau et al., 2008); higher values indicate greater homophily. Financial status, parents' education, sociopolitical values, and political attitudes were entered using the *absdiff* function in *statnet*; lower values (differences) indicate greater homophily. OR = odds ratio; CI = confidence interval; RWA = right-wing authoritarianism; SDO = social dominance orientation.

With each unit of similarity in anti-immigration attitudes, early adolescent peers had a 7% greater likelihood of having a shared nomination. In contrast with our preregistered analyses, results also showed that a lower absolute difference in attitudes about Trump was significantly associated with a greater likelihood of having a peer-nomination tie ($OR = 0.92$, $SE = 0.03$, $p = .01$). With each unit of similarity in attitudes about Trump, early adolescent peers had an 8% greater likelihood of having a shared nomination. Given that this finding was not statistically significant in our full model, it is likely that similarities in sociopolitical values partially accounted for similarities in attitudes about Trump.

Discussion

The purpose of this preregistered study was to examine political homophily during early adolescence, a developmental period when youths are forming political

attitudes, prioritizing personal friendships, and expanding their autonomy over time spent with peers. Using data from a near-complete social network, we found evidence of peer political homophily early in life; early adolescents demonstrated peer similarities in political attitudes and values. Results were consistent after we accounted for network and demographic characteristics known to contribute to peer homophily.

Consistent with our preregistered hypotheses, results showed that early adolescents were more likely to spend time with other peers who had similar sociopolitical values, including RWA and patriotism. Early adolescence is a developmental period characterized by increased abstract reasoning abilities, which allow youths to form attitudes about the legitimacy of laws and how to respond to rule violations (Oosterhoff et al., 2017). Additionally, patriotism has been demonstrated among young children (Helwig & Prencipe, 1999), and although contentious, it is often taught in U.S. public

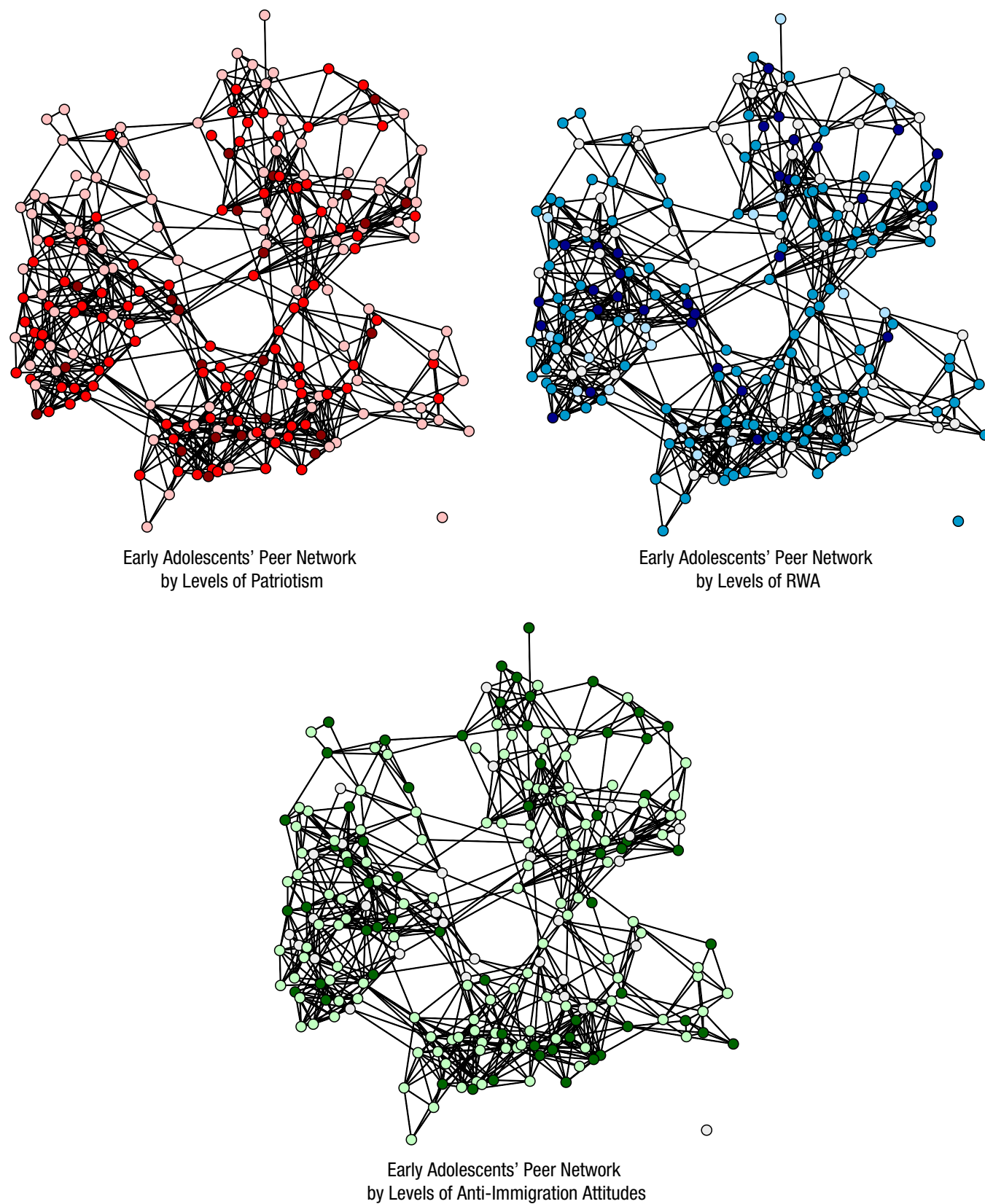


Fig. 1. Early adolescent peer networks estimated in the preregistered analyses by significant effects of patriotism (top left), right-wing authoritarianism (RWA; top right), and anti-immigration attitudes (bottom). Darker colors represent higher values of the respective attitude or value.

Table 3. Results From Non-Preregistered Exponential Random-Graph Models for Sociopolitical Values and Attitudes by Subscales

Variable	Values only				Values and attitudes			
	OR	SE	p	95% CI	OR	SE	p	95% CI
Network properties								
Number of edges	0.00	0.26	.00	[0.00, 0.01]	0.00	0.27	.00	[0.00, 0.01]
No edgewise-shared partners	0.08	0.11	.00	[0.06, 0.10]	0.08	0.11	.00	[0.06, 0.10]
One edgewise-shared partner	0.17	0.08	.00	[0.15, 0.20]	0.17	0.08	.00	[0.15, 0.20]
Open triangles	0.33	0.07	.00	[0.29, 0.38]	0.33	0.07	.00	[0.29, 0.38]
Closed triangles	0.51	0.08	.00	[0.43, 0.60]	0.51	0.08	.00	[0.43, 0.60]
Friendship skew	75.14	0.32	.00	[40.36, 139.89]	81.58	0.32	.00	[43.94, 151.47]
Demographic covariates								
Gender	1.94	0.05	.00	[1.74, 2.16]	1.94	0.05	.00	[1.74, 2.16]
Grade	7.24	0.17	.00	[5.16, 10.17]	7.24	0.17	.00	[5.15, 10.18]
Race	1.08	0.09	.40	[0.90, 1.30]	1.09	0.09	.37	[0.90, 1.31]
Ethnicity	1.12	0.11	.31	[0.90, 1.38]	1.14	0.11	.24	[0.92, 1.40]
Financial status	0.81	0.05	.00	[0.74, 0.90]	0.82	0.05	.00	[0.74, 0.90]
Parents' education	0.83	0.05	.00	[0.75, 0.92]	0.82	0.05	.00	[0.74, 0.91]
Sociopolitical values								
RWA authoritarianism subscale	0.91	0.05	.03	[0.83, 0.99]	0.92	0.05	.06	[0.84, 1.00]
RWA conservatism subscale	1.03	0.05	.60	[0.92, 1.15]	1.03	0.05	.64	[0.92, 1.14]
RWA traditionalism subscale	0.90	0.04	.02	[0.82, 0.98]	0.91	0.05	.04	[0.83, 0.99]
SDO anti-egalitarianism subscale	0.97	0.04	.52	[0.90, 1.05]	0.99	0.04	.73	[0.91, 1.07]
SDO dominance subscale	1.04	0.04	.43	[0.95, 1.13]	1.05	0.04	.30	[0.96, 1.14]
Patriotism	0.82	0.05	.00	[0.75, 0.90]	0.84	0.05	.00	[0.77, 0.92]
Political attitudes								
Environmentalism					0.97	0.04	.49	[0.90, 1.05]
Anti-immigration					0.92	0.04	.04	[0.85, 1.00]
Personal attributions for poverty					0.97	0.04	.43	[0.91, 1.04]
Social attributions for poverty					1.05	0.04	.25	[0.96, 1.15]
Support Trump					0.96	0.03	.17	[0.90, 1.02]
Support Obama					0.96	0.04	.26	[0.89, 1.03]

Note: Values in boldface are significant primary effects ($p < .05$). Gender, grade, race, and ethnicity were modeled categorically and entered using the *nodematch* function in the *statnet* package in R (Version 2019.6; Goodreau et al., 2008); higher values indicate greater homophily. Financial status, parents' education, sociopolitical values, and political attitudes were entered using the *absdiff* function in *statnet*; lower values (differences) indicate greater homophily. OR = odds ratio; CI = confidence interval; RWA = right-wing authoritarianism; SDO = social dominance orientation.

schools (Westheimer, 2006). Early adolescence may be a developmental period in which greater heterogeneity in RWA and patriotism begins to emerge, and youths may draw on their experiences with their peers when evaluating their stances toward national reverence, laws, and punishment. Exploratory supplemental analyses indicate that political homophily appeared specific to the authoritarianism and traditionalism but not conservatism domains of RWA. It is possible that youths are more drawn to similarities in beliefs about laws and broader perspectives about life principles than concepts of obedience.

Early adolescent peers were also more likely to spend time with others who shared similar views toward immigration. Immigration was an especially contentious issue during the time of data collection, when misleading information about "migrant caravans" threatening the United States was being propagated and policy directing the separation of migrant children from their parents was being enforced (Kunst et al., 2019). These ongoing current events may have led to greater discussions of immigration among peers and thus provided greater opportunities for socialization and peer selection.

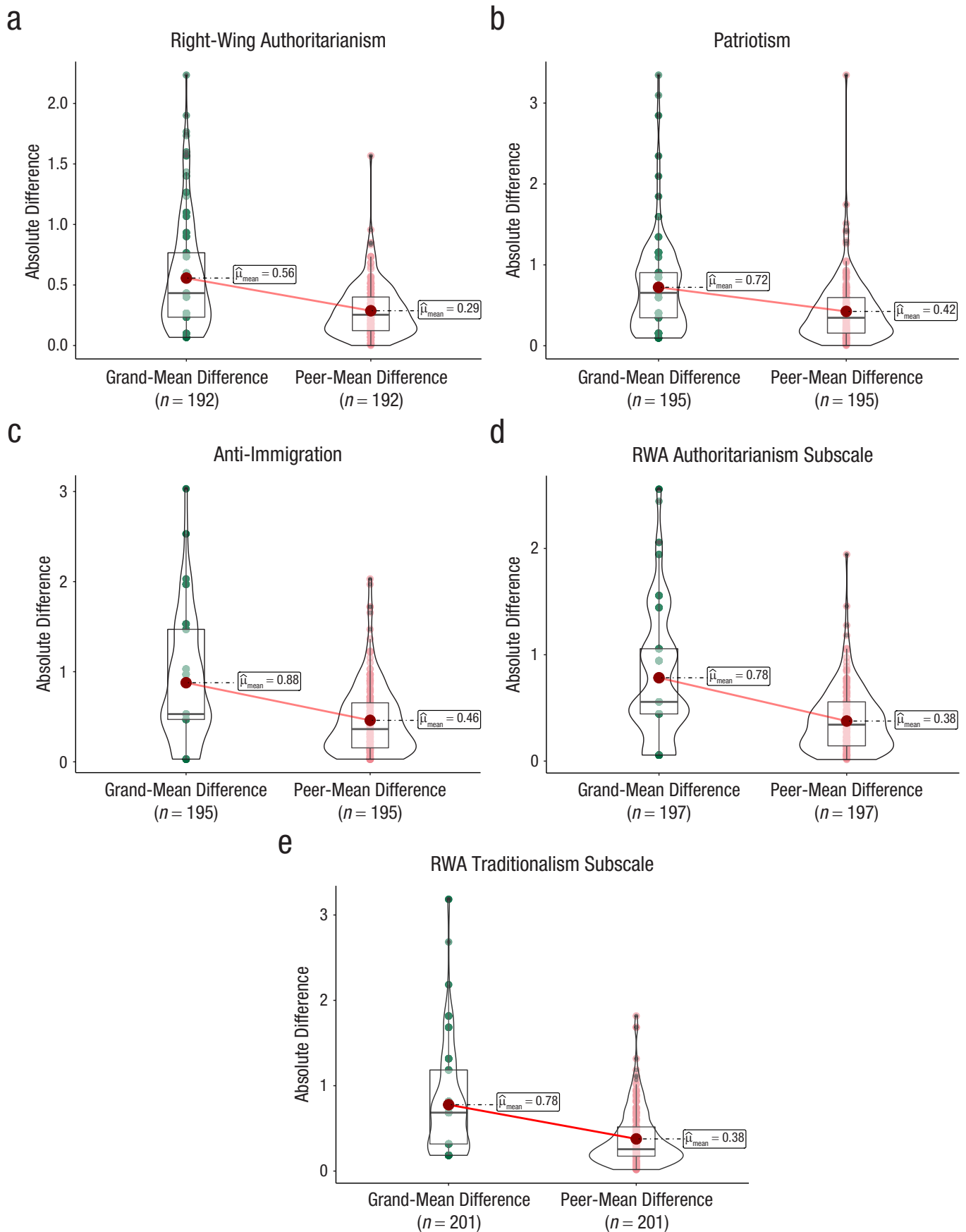


Fig. 2. (continued on next page)

Fig. 2. Mean differences in adolescents' grand-mean centered and peer-mean centered attitudes toward (a) right-wing authoritarianism (RWA), (b) patriotism, (c) anti-immigration, (d) authoritarianism (measured on the RWA authoritarianism subscale), and (e) traditionalism (measured on the RWA traditionalism subscale). In each graph, individual data for grand-mean differences are shown as light green circles and for peer-mean differences as light red circles; the width of each violin indicates the density of the data. Dark red circles indicate group means, and solid red lines connect group means for grand- and peer-mean differences. Boxes indicate the interquartile range of the data; horizontal lines indicate medians, and whiskers extend 1.5 times the interquartile range.

The effect sizes of political homophily in early adolescents are notable. Being one unit closer in your RWA, patriotism, or immigration attitudes results in a 9% to 14% greater likelihood of spending time with a given peer. These effects are considerable given that models adjusted for a variety of demographic characteristics and structural network properties. Additional analyses further demonstrated that early adolescents were approximately twice as similar to their nominated peers in RWA, patriotism, and anti-immigration attitudes relative to the average of students in their school. The strength of similarities between early adolescent peers calls further attention to the need to understand political development within a peer context.

Findings from this study have theoretical implications. Past research on political development has generally focused on the role of parents in socializing children and teens' political attitudes (e.g., Tedin, 1980). We provide evidence that early adolescents are also similar in their political attitudes and values to their peers, indicating that peers may play a meaningful—yet understudied—role in adolescent political development. Demonstrating political homophily in early adolescence extends our knowledge of political and developmental psychology by suggesting that (a) peers may socialize political attitudes and thus represent an important source of individual differences in political beliefs, (b) adolescents' political attitudes may contribute to peer selection and thus play an important role in guiding social decisions, and/or (c) other shared

experiences (e.g., extracurricular involvement) or sorting processes (e.g., parents allowing children to spend time with similar-minded peers) may lead youths to adopt similar political attitudes. Results from this study serve as a necessary first step in establishing the presence of political homophily in youths. The processes explaining homophily are not mutually exclusive and likely happen simultaneously to varying degrees (Sijtsema et al., 2010). Understanding these processes early in life can provide valuable insight into the developmental mechanisms that undergird political polarization and provide opportunities to develop interventions within a school setting that may help reduce political homophily.

Limitations and constraints on generalizability

Findings should be interpreted in the context of certain limitations. The research design was cross-sectional, and causal claims or temporal sequencing cannot be established. It is unclear whether peers socialize political attitudes and values or whether youths select peers on the basis of their political attitudes and values. Past research suggests that peer selection and homophily are bidirectional (Neal, 2020), and future research is needed to examine these questions longitudinally. Longitudinal research that spans school-year transitions may be especially valuable given that these periods are often accompanied by shifts in peer networks (Bowker, 2004). Additionally, it is possible that contextual factors such as

Table 4. Mean Differences in Adolescents' Grand-Mean Centered and Peer-Mean Centered Political Attitudes and Values

Variable	Student's <i>t</i>	<i>p</i>	Hedges's \hat{g}	95% CI	<i>N</i> _{pairs}	log _e BF ₀₁	$\hat{\delta}$	95% HDI	JZS Cauchy <i>r</i>
							posterior difference		
RWA	<i>t</i> (191) = 7.45	3.14×10^{12}	.54	[.39, .69]	192	−21.53	−0.27	[−0.34, −0.19]	.71
Patriotism	<i>t</i> (194) = 6.40	1.16×10^9	.46	[.31, .60]	195	−15.79	−0.29	[−0.39, −0.24]	.71
Anti-immigration attitudes	<i>t</i> (194) = 7.70	6.6×10^{13}	.55	[.40, .70]	195	−23.04	−0.41	[−0.52, −0.30]	.71
RWA authoritarianism subscale	<i>t</i> (196) = 8.35	1.23×10^{14}	.59	[.44, .74]	197	−26.92	−0.40	[−0.49, −0.30]	.71
RWA traditionalism subscale	<i>t</i> (200) = 9.15	6.85×10^{17}	.64	[.49, .80]	201	−31.99	−0.40	[−0.48, −0.31]	.71

Note: CI = confidence interval; BF₀₁ = Bayes factor favoring the null over the alternative hypothesis; HDI = highest density interval; JZS = Jeffreys-Zellner-Siow; RWA = right-wing authoritarianism.

shared participation in church or extracurricular activities may explain homophily in political attitudes, and future research using multimethod and experimental designs is needed to address this issue (Schaefer et al., 2011).

Findings from this study also have at least two constraints on generalizability. Although representative of the region from which it was drawn, the sample was mostly White and from a mid-size rural town. Findings should be replicated among youths from more diverse geographic and sociodemographic backgrounds. Political homophily will likely be present among youths from different contexts; however, the specific attitudes or values that demonstrate homophily may differ. Consulting with a CAB to identify the political issues most relevant for the specific community sampled may be especially useful for future studies examining these processes in other contexts. Findings should also be interpreted in the context of the specific sociopolitical climate in which the study occurred. Data were collected in Fall 2019, a time when political division was relatively high compared with other points in U.S. history. Some research suggests that political conflict can lead to important disruptions among adolescent friends (Oosterhoff et al., 2022) and that the sociopolitical contexts change over historical time (Oosterhoff et al., 2020). Future research should continue to examine these processes over time to understand how period and cohort effects impact these results.

Conclusion

Political homophily is thought to be a basic social and psychological process that results from socialization and plays a key role in political development. Little is known about whether polarization exists or emerges early in life. In the current study, we used a social network approach to demonstrate that early adolescents are similar to their peers in a variety of political attitudes and values. These findings call for greater investigation of how political attitudes and peer relationships codevelop over time. Such efforts will provide valuable insight into the emergence and developmental consequences of political attitudes and values.

Transparency

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Author Contributions

B. Oosterhoff conceived of the study and designed it in consultation with C. A. Palmer. B. Oosterhoff led the data acquisition, performed the statistical analyses, and interpreted the data. A. Poppler participated in the data acquisition. All the authors drafted the manuscript and approved the final version for submission.

Declaration of Conflicting Interests

The author(s) declared that there were no conflicts of interest with respect to the authorship or the publication of this article.

Open Practices

All data, analysis scripts, and materials have been made publicly available via OSF and can be accessed at <https://osf.io/4tgxy/>. The design and analysis plans for the study were preregistered at <https://osf.io/jdtvs/>. This article has received the badges for Open Data, Open Materials, and Preregistration. More information about the Open Practices badges can be found at <http://www.psychologicalscience.org/publications/badges>.



Supplemental Material

Additional supporting information can be found at <http://journals.sagepub.com/doi/suppl/10.1177/09567976211063912>

References

- Andrews, N. C. Z., Hanish, L. D., Updegraff, K. A., Martin, C. L., & Santos, C. E. (2016). Targeted victimization: Exploring linear and curvilinear associations between social network prestige and victimization. *Journal of Youth and Adolescence*, 45(9), 1772–1785. <https://doi.org/10.1007/s10964-016-0450-1>
- Bizumic, B., & Duckitt, J. (2018). Investigating right wing authoritarianism with a very short authoritarianism scale. *Journal of Social and Political Psychology*, 6(1), 129–150. <https://doi.org/10.5964/jssp.v6i1.835>
- Bowker, A. (2004). Predicting friendship stability during early adolescence. *The Journal of Early Adolescence*, 24, 85–112. <https://doi.org/10.1177/0272431603262666>
- Burt, R. S. (1987). A note on missing network data in the general social survey. *Social Networks*, 9(1), 63–73. [https://doi.org/10.1016/0378-8733\(87\)90018-9](https://doi.org/10.1016/0378-8733(87)90018-9)
- Cheadle, J. E., & Schwadel, P. (2012). The ‘friendship dynamics of religion,’ or the ‘religious dynamics of friendship?’ A social network analysis of adolescents who attend small schools. *Social Science Research*, 41, 1198–1212. <https://doi.org/10.1016/j.ssresearch.2012.03.014>
- Colleoni, E., Rozza, A., & Arvidsson, A. (2014). Echo chamber or public sphere? Predicting political orientation and measuring political homophily in Twitter using big data. *Journal of Communication*, 64, 317–332. <https://doi.org/10.1111/jcom.12084>
- Dahl, V., & van Zalk, M. (2014). Peer networks and the development of illegal political behavior among adolescents. *Journal of Research on Adolescence*, 24(2), 399–409. <https://doi.org/10.1111/jora.12072>
- Duckitt, J., & Sibley, C. G. (2009). A dual-process motivational model of ideology, politics, and prejudice. *Psychological Inquiry*, 20(2–3), 98–109. <https://doi.org/10.1080/10478400903028540>

- Flanagan, C. A., Kim, T., Pykett, A., Finlay, A., Galloway, E. E., & Pancer, M. (2014). Adolescents' theories about economic inequality: Why are some people poor while others are rich? *Developmental Psychology*, 50, 2512–2525.
- Galinsky, E. (1999). *Ask the children: What America's children really think about working parents*. William Morrow.
- Godfrey, E. B., Burson, E. L., Yanisch, T. M., Hughes, D., & Way, N. (2019). A bitter pill to swallow? Patterns of critical consciousness and socioemotional and academic well-being in early adolescence. *Developmental Psychology*, 55, 525–537. <https://doi.org/10.1037/dev0000558>
- Goodreau, S. M., Handcock, M. S., Hunter, D. R., Butts, C. T., & Morris, M. (2008). A statnet tutorial. *Journal of Statistical Software*, 24(9). <https://doi.org/10.18637/jss.v024.i09>
- Helwig, C. C., & Prencipe, A. (1999). Children's judgments of flags and flag-burning. *Child Development*, 70(1), 132–143. <https://doi.org/10.1111/1467-8624.00010>
- Ho, A. K., Sidanius, J., Kteily, N., Sheehy-Skeffington, J., Pratto, F., Henkel, K. E., Foels, R., & Stewart, A. L. (2015). The nature of social dominance orientation: Theorizing and measuring preferences for intergroup inequality using the new SDO₇ scale. *Journal of Personality and Social Psychology*, 109(6), 1003–1028. <https://doi.org/10.1037/pspi0000033>
- Ho, L., McAvoy, P., Hess, D., & Gibbs, B. (2017). Teaching and learning about controversial issues and topics in the social studies. In M. M. Manfra & C. M. Bolick (Eds.), *The Wiley handbook of social studies research* (pp. 319–335). Wiley.
- Hooghe, M., & Wilkenfeld, B. (2008). The stability of political attitudes and behaviors across adolescence and early adulthood: A comparison of survey data on adolescents and young adults in eight countries. *Journal of Youth and Adolescence*, 37(2), 155–167. <https://doi.org/10.1007/s10964-007-9199-x>
- Hope, E. C., & Spencer, M. B. (2017). Civic engagement as an adaptive coping response to conditions of inequality: An application of phenomenological variant of ecological systems theory (PVEST). In N. Cabrera & B. Leyendecker (Eds.), *Handbook of positive development of minority children* (pp. 421–435). Springer.
- Huber, G. A., & Malhotra, N. (2017). Political homophily in social relationships: Evidence from online dating behavior. *The Journal of Politics*, 79, 269–283.
- Huckfeldt, R., & Sprague, J. (1995). *Citizens, politics and social communication: Information and influence in an election campaign*. Cambridge University Press.
- Hunsberger, B. (1995). Religion and prejudice: The role of religious fundamentalism, quest, and right-wing authoritarianism. *Journal of Social Issues*, 51, 113–129. <https://doi.org/10.1111/j.1540-4560.1995.tb01326.x>
- Ilmarinen, V., Vainikainen, M., Verkasalo, M. J., & Lönnqvist, J. (2017). Homophilous friendship assortment based on personality traits and cognitive ability in middle childhood: The moderating effect of peer network size. *European Journal of Personality*, 31(3), 208–219. <https://doi.org/10.1002/per.2095>
- Killen, M., Mulvey, K. L., & Hitti, A. (2013). Social exclusion in childhood: A developmental intergroup perspective. *Child Development*, 84, 772–790. <https://doi.org/10.1111/cdev.12012>
- Kornienko, O., Santos, C. E., Martin, C. L., & Granger, K. L. (2016). Peer influence on gender identity development in adolescence. *Developmental Psychology*, 52(10), 1578–1592. <https://doi.org/10.1037/dev0000200>
- Krosnick, J. A. (1991). The stability of political preferences: Comparisons of symbolic and nonsymbolic attitudes. *American Journal of Political Science*, 35(3), 547–576. <https://doi.org/10.2307/2111553>
- Kunst, J. R., Dovidio, J. F., & Thomsen, L. (2019). Fusion with political leaders predicts willingness to persecute immigrants and political opponents. *Nature Human Behaviour*, 3(11), 1180–1189. <https://doi.org/10.1038/s41562-019-0708-1>
- Luke, D. (2015). *A user's guide to network analysis in R*. Springer International Publishing. <https://doi.org/10.1007/978-3-319-23883-8>
- McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). Birds of a feather: Homophily in social networks. *Annual Review of Sociology*, 27(1), 415–444. <https://doi.org/10.1146/annurev.soc.27.1.415>
- Metzger, A., Oosterhoff, B., Palmer, C. A., & Ferris, K. (2014). Dimensions of citizenship: Associations among adolescents' sociopolitical values and civic judgments. *PS: Political Science & Politics*, 47(2), 443–448. <https://doi.org/10.1017/S1049096514000365>
- Mooijman, M., & Stern, C. (2016). When perspective taking creates a motivational threat: The case of conservatism, same-sex sexual behavior, and anti-gay attitudes. *Personality and Social Psychology Bulletin*, 42(6), 738–754. <https://doi.org/10.1177/0146167216636633>
- Neal, J. W. (2020). A systematic review of social network methods in high impact developmental psychology journals. *Social Development*, 29(4), 923–944. <https://doi.org/10.1111/sode.12442>
- Oosterhoff, B., Ferris, K. A., & Metzger, A. (2017). Adolescents' sociopolitical values in the context of organized activity involvement. *Youth & Society*, 49(7), 947–967. <https://doi.org/10.1177/0044118X14560528>
- Oosterhoff, B., Poppler, A., Hill, R. M., Fitzgerald, H., & Shook, N. J. (2022). *Understanding the costs and benefits of politics among adolescents within a sociocultural context*. *Infant and Child Development*, 31(2), Article e2280. <https://doi.org/10.1002/icd.2280>
- Oosterhoff, B., Wray-Lake, L., Palmer, C. A., & Kaplow, J. B. (2020). Historical trends in concerns about social issues across four decades among U.S. adolescents. *Journal of Research on Adolescence*, 30(Suppl. 2), 485–498. <https://doi.org/10.1111/jora.12493>
- Rubin, K., Bukowski, W., & Parker, J. (2006). *Peers, relationships, and interactions*. In W. Damon & R. Lerner (Eds.), *Handbook of child psychology* (pp. 571–645). Wiley.
- Ryan, A. M. (2001). The peer group as a context for the development of young adolescent motivation and achievement. *Child Development*, 72(4), 1135–1150. <https://doi.org/10.1111/1467-8624.00338>

- Schaefer, D. R., Simpkins, S. D., Vest, A. E., & Price, C. D. (2011). The contribution of extracurricular activities to adolescent friendships: New insights through social network analysis. *Developmental Psychology, 47*(4), 1141–1152. <https://doi.org/10.1037/a0024091>
- Sijtsema, J. J., Ojanen, T., Veenstra, R., Lindenberg, S., Hawley, P. H., & Little, T. D. (2010). Forms and functions of aggression in adolescent friendship selection and influence: A longitudinal social network analysis. *Social Development, 19*(3), 515–534. <https://doi.org/10.1111/j.1467-9507.2009.00566.x>
- Steinberg, L., & Monahan, K. C. (2007). Age differences in resistance to peer influence. *Developmental Psychology, 43*(6), 1531–1543. <https://doi.org/10.1037/0012-1649.43.6.1531>
- Stewart, T., & Suldo, S. (2011). Relationships between social support sources and early adolescents' mental health: The moderating effect of student achievement level. *Psychology in the Schools, 48*(10), 1016–1033. <https://doi.org/10.1002/pits.20607>
- Tedin, K. L. (1980). Assessing peer and parent influence on adolescent political attitudes. *American Journal of Political Science, 24*, 136–154. <https://doi.org/10.2307/2110929>
- van Buuren, S., & Groothuis-Oudshoorn, K. (2011). mice: Multivariate imputation by chained equations in R. *Journal of Statistical Software, 45*(3). <https://doi.org/10.18637/jss.v045.i03>
- Van der Graaff, J., Branje, S., De Wied, M., Hawk, S., Van Lier, P., & Meeus, W. (2014). Perspective taking and empathic concern in adolescence: Gender differences in developmental changes. *Developmental Psychology, 50*(3), 881–888. <https://doi.org/10.1037/a0034325>
- Van Zalk, M. H. W., Kerr, M., Branje, S. J., Stattin, H., & Meeus, W. H. (2010). It takes three: Selection, influence, and de-selection processes of depression in adolescent friendship networks. *Developmental Psychology, 46*, 927–938. <https://doi.org/10.1037/a0019661>
- Westheimer, J. (2006). Politics and patriotism in education. *Phi Delta Kappan, 87*(8), 608–620. <https://doi.org/10.1177/003172170608700817>
- Xie, H., Li, Y., Boucher, S. M., Hutchins, B. C., & Cairns, B. D. (2006). What makes a girl (or a boy) popular (or unpopular)? African American children's perceptions and developmental differences. *Developmental Psychology, 42*(4), 599–612. <https://doi.org/10.1037/0012-1649.42.4.599>