Processes of Political Socialization: A Communication Mediation Approach to Youth Civic Engagement

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Abstract

By analyzing data from a national panel survey of adolescents (ages 12-17) and their parents conducted around the 2008 general election, this study explores the varied roles communication plays in socializing youth into democratic citizenship. In particular, we propose and test a communication mediation model of youth socialization, in which interdependent communication processes located in the family, schools, media, and peer networks combine to cultivate communication competence, a set of basic communication skills and motives needed for active and informed participation in public life. Analysis of our panel data indicates that participation in deliberative classroom activities and democratic peer norms contribute to civic activism among youth. These peer and school influences, however, are found to be largely indirect, working through informational use of conventional and online news media, and expression and discussion of political ideas outside of classroom and family boundaries. In particular, our findings highlight strong online pathways to participation, centering on news consumption and political expression via digital media technologies, suggesting the key role of the Internet in this dynamic.

Keywords

communication competence, classroom deliberation, digital media, family communication, news media use, online and offline political expression

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Normative concerns with declining civic and political engagement and its implications for the proper functioning of our democracy have prompted scholars and policy analysts to investigate what depresses or spurs people's desire to engage in public life (Putnam, 2000; Verba, Schlozman, & Brady, 1995). Increasingly, research exploring the causes and the consequences of citizen engagement has focused on youth, in large part, because most work in this area concluded that younger generations are particularly apathetic to civic and political life. Not only are young people less knowledgeable about politics and less likely to consume public affairs news content than their elders but also they are less trusting of their fellow citizens, less inclined to join social organizations, to volunteer, and to vote (Delli Carpini, 2000; Galston, 2001; Levine & Lopez, 2002; Patterson, 2007). Despite a recent surge in political activism among young people as indicated by a record high level of youth voter turnout in the last presidential election (Kirby & Kawashima-Ginsberg, 2009), it is questionable whether this uptick in youth engagement is sufficient for sustaining democratic institutions and actually reversing the trend of youth disengagement from civic and political life.

In the face of these concerns, a growing body of research draws its attention to the roles played by communication in socializing young people into competent and active citizens (McLeod, 2000). Slowly turning away from the static functionalism that emphasized the acquisition of skills and norms for the maintenance of a political system, this recent wave of research on youth socialization has shifted its focus onto how young citizens develop key capacities and motives that are necessary to participate meaningfully and effectively in the democratic processes (Bennett, 2008; McLeod & Shah, 2009). This view highlights the centrality of communicative phenomena in the home, at school, among peers, and through media in the development of young citizens' democratic competencies and motivations for engagement.

This focus on communication is especially relevant given the changing media environment arising from the transition to digital technologies. In particular, networked digital media tools, such as instant messaging, blogging, and social networking, have emerged as daily resources for social communication, information access, discussion, and expression (Lenhart, Madden, Macgill, & Smith, 2007). Access to networked digital media technologies is common among youth, who are particularly adept at their use (Palfrey & Gasser, 2008). As young people's engagement with digital media becomes more ubiquitous, scholars have called attention to the ways that digital media use enhances young people's civic and political development. By facilitating access to political information and by providing tools and avenues for political expression and mobilization, many believe digital media afford new possibilities for civic and political activism among young people (Bennett, 2008; Delli Carpini, 2000; Mossberger, Tolbert, & McNeal, 2007). Recent research also suggests that engagement with new digital media—even one that is not political in nature— provides young people with opportunities to develop relevant skills, knowledge, and capacities that are essential for participating in collective action (Ito et al., 2009; Quintelier & Vissers, 2008; Smith, Schlozman, Verba, & Brady, 2009). These practices, coupled with the rapid transition to information technologies and social media, highlight the need for a comprehensive inquiry into how communication is now related to youth socialization.

To examine this question, we draw on "communication mediation models," a group of theoretical models emphasizing the critical role of communication activities in channeling effects of social structural factors toward various democratic outcomes. We extend these models to propose a communicative model of youth civic engagement, in which interdependent communication processes located in the family, schools, media, and peer networks combine to cultivate active citizenship among adolescents. In particular, our model postulates that informational use of news media and communication among adolescents are central to the mediating process by which influences of families, schools, and peers are translated into various forms of civic and political engagement. To test the model, we analyze a data set we collected from national panel surveys of adolescents (ages 12-17) and their parents around the 2008 general election. Based on these panel data, we explore processes of communicative socialization wherein a range of communicative activities—from talking politics at home or in school to consuming conventional and digital news content—cultivate civic activism among adolescents.

Communication Mediation and Communication Competence

The contribution made by communication to the process of youth civic and political development has been widely overlooked. The role of interpersonal and mass communication in young people's lives emerged as a serious research topic only in the early 1970s (McLeod, 2000). But the emerging communication perspective on youth socialization clearly distanced itself from early functionalist political socialization models, which viewed the developing youth as a passive recipient of information and norms from family, school, and media. The communication approach instead considers adolescents as active participants in their own socialization (McDevitt & Chaffee, 2002), with particular attention given to learning that goes beyond the acquisition of a predetermined set of facts and beliefs reflecting the political system. This approach also acknowledges that learning is often bidirectional, involving lateral peer-to-peer learning and even upward child-to-parent learning (McDevitt, 2006). Finally, this perspective highlights the interdependence of varied socializing agents, countering the traditional view of them as independent sources of influence, acting sequentially from childhood through adolescence (i.e., first parents, then teachers, and later news media and peers).

We seek to further advance this perspective, drawing on two interrelated concepts underlying this approach: communication competence (i.e., sets of communication skills and motives essential for democratic engagement) and communication mediation (i.e., the process in which news consumption and political discussion shape and direct social structural influences on civic and political engagement). We maintain both concepts are central to understanding the conceptual linkages that connect key socializing agents to participatory outcomes. The concepts also highlight the *processes* of civic development, which have been neglected by the early model of political socialization to focus on political *outcomes* such as civic attitudes and behaviors.

Communication Competence

Many different competencies provide young people with the capacity to enter into public life with confidence, a number of which transcend contexts, and are powerful predictors of a range of behaviors. Chief among the repertoire of civic competencies required for political socialization, we contend, is *communication competence*. Building on recent conceptual efforts (McLeod, Shah, Hess, & Lee, 2010; Shah, McLeod, & Lee, 2009), we understand *communication competence* as encompassing *media use*, particularly public affairs news consumption via broadcast, print, and online sources, and *interpersonal communication*, in terms of discussion of public affairs and politics at home, in school, and among peers, in person, and online.

As such, communication competence is multifaceted. It includes the traditional notion of media literacy as well as interpersonal communication skills. Thus relevant skills and capacities are not limited to understanding and critiquing public affairs media content but include effective information searching, listening to other viewpoints, connecting ideas and perspectives, expressing opinions and ideas, and actively engaging with others in public-spirited conversation. Communication competence, in this formulation, is a mega concept (McLeod & Pan, 2005), represented by and derived from a range of discrete indicators of family communication patterns, deliberative activities in school, news media use, and interpersonal discussion (Chaffee, McLeod, & Wackman, 1973; Hess, 2002; McLeod, 2000).

The four key agents of socialization in public life—family, school, media, and peers—all contribute to the development of communication competence. As a collection, the skills and abilities developed in family communication, during curricular and extracurricular activities, through media use, and via interpersonal talk equip young people with the means to navigate toward citizenship. We contend that these skill sets facilitate citizenship by providing the foundation on which young people can explore ideas, process information, and reflect about public affairs, and also by endowing them with the ability and the motivation to form arguments, express opinions, manage disagreements, and form complex issue understandings. These skills are all important components of communication competence.

These different components of communication competence are understood as being interdependent and interconnected. Communication norms established in the family likely shape whether young people choose to seek out classroom deliberation, consume news media, and talk about politics with peers. Likewise, deliberative activities in the classroom, which often include following the news and talking about controversial issues as curricular elements, should spur these same actions outside of school settings. All of these indicators of the communication competence represent elements of a larger process of *communicative socialization*. The flexibility of the capacities developed through family communication, classroom deliberation, information consumption, and political talk should spur varied forms of engagement.

Family communication. Such communicative competencies begin to develop early, initially shaped by patterns of communication between parents and children. Family communication patterns (FCP) are thought to vary on two discrete dimensions, socio oriented and concept oriented (Chaffee et al., 1973). Families high on the socio dimension emphasize

harmony, conformity, and authority in parent-child relationships. Those high on the concept-dimension emphasize the free and open exchange of ideas and welcome conversational disagreement (Fitzpatrick & Ritchie, 1994). The concept-dimension is key to civic socialization, because it opens young people to the exploration of opposing perspectives and rewards discussion as a norm, which they are inclined to seek in school settings and peer interactions.

Peer norms. Roles of peer groups for youth socialization have been well recognized (Corsaro & Eder, 1995; Feigenberg, King, Barr, & Selman, 2008). Homogeneous in terms of age and gender, peer groups play a powerful role in developing social norms about interaction and behavior. Those who violate the norms are often sanctioned by ridicule or exclusion, while those who conform are more socially integrated (Adler & Adler, 1995). Although young people's concern for group approval has been linked to delinquent behavior, peer groups also expose young people to procivic ideas, values, and life experiences. Young people who interact with peers who value knowledge and discussion of public affairs content are likely to be encouraged to consume and reflect on news content. Informed exchange of views among peers increases thoughtfulness and openness, facilitating recruitment into collective action.

Classroom deliberation. The effects of concept orientation and of peer norms on engagement, writ large, may be complemented by deliberative activities in the classroom, especially when these activities involve controversial issue discussion and civic life simulations (i.e., mock trials and elections). Both of these curricular activities have been linked to the development of communication skills and civic attitudes (Hess, 2002; Kahne & Westheimer, 2003). The capacity of schools to teach children to deliberate and role play around contemporary issues is rooted in "the fact that they contain more ideological diversity than one would expect to find in a family, church, synagogue, mosque, or club" (Hess, 2004, p. 257). This may also explain the power of youth involvement in student government and school media (Eccles & Barber, 1999). These sorts of curricular and extracurricular activities often require young people to monitor current affairs at the local, national, and international level, providing an informational base to the development of deliberative motivation and skills.

News media use. The incorporation of news use into classroom deliberation indicates the centrality of public affairs media for training youth in key communication skills. It is well established that news media use has substantial direct and indirect effects on civic and political participation throughout the life course (McLeod, 2000). Many of these insights have resulted from looking beyond *how much* media are used to consider the *why* and *how* of attention to specific types of content (Shah, McLeod, & Yoon, 2001). These studies also point to the importance of understanding the difference between *dosage* and *potency* when examining the role of media in youth socialization. For example, broadcast news viewing is more widespread than newspaper reading among young adults, yet print news use has more influence on civic engagement than broadcast news use (McLeod et al., 2009). Likewise, the Internet, especially unconventional online news use (e.g., blogs and candidate web sites), dwarfs the potency of traditional news use as a socialization agent despite the fact that levels of use for online news remain low (Castells, 2007; Friedland, 1996; Jennings & Zeitner, 2003; McLeod et al., 2009).

Communication Mediation

A substantial body of communication research has documented the extent and the importance of the *mediating* roles of communication, both news media use and political talk, for engagement in public life (Delli Carpini, 2004; Shah, Cho, Kwak, & Eveland, 2005). These forms of communication amplify, shape, and direct the impact of social structural location, cultural and subcultural forms, and other background factors on citizens' understanding and participation in democratic societies. Various inquiries about the mediating roles of communication have coalesced into "communication mediation models," which conclude that informational media use and political discussion largely channel the effects of demographics, ideology, and social structure on outcome orientations and participatory responses (Sotirovic & McLeod, 2004; Shah et al., 2007). This process has been further specified in the form of a *Citizen Communication Mediation Model* (Shah et al., 2005). This model theorizes and finds that media's influences are strong, but largely indirect, shaping participatory behaviors through effects on conventional and online discussion about news with others.

This new model adds to research on the relationship between information and participation in two ways: (a) it situates communication among citizens as a critical mediator between information seeking via the mass media and democratic outcomes, adding another step in the causal chain[1]; and (b) it asserts that online pathways to participation complement existing offline pathways, adding a new mediational route. It is important to note that this citizen communication mediation model contends that there are not only similarities but also important differences between talking about politics face-to-face (i.e., political discussion) and expressing political views online (i.e., political messaging) for engagement in civic and political life.

Face-to-face political talk largely occurs with family, friends, coworkers, and others within one's social network, and is thought to expose people to a somewhat wider range of perspectives, help citizens interpret media messages, and construct meaning about public affairs (Kim & Kim, 2008; Southwell & Yzer, 2007). Online political messaging may share some of these characteristics. However, it also permits the sharing of views with a much wider and dispersed array of people while also allowing for asynchronous communication in which "turn taking" takes place over days or weeks. As such, the costs of mass expression and collective organizing are reduced, allowing individuals to produce, at minimal cost, texts that can be dispersed to audiences, large and small (Lupia & Sin, 2003). Such messaging is largely textual and has been shown to generate compositional effects linked to message expression (Han et al, 2011).

Although these citizen communication mediation models specify important pathways to youth civic engagement, they have only begun to consider the broader set of social-structural factors that they channel toward participatory activities. Furthermore, while these communication models have received substantial empirical support from studies using adult samples, it is uncertain whether they operate in the same manner among adolescents. Testing this model among youth is a necessary next step, especially considering

this generation's use of digital media as a public communication sphere. Of course, any effort to do so must consider other sites of communicative and civic activities such as school, home, and peer groups.

Theoretical Model

Combining the insights provided by communication competence and communication mediation, we propose the following theoretical model of youth socialization into civic and political life. It addresses the relationships of the following three groups of variables with civic engagement: antecedents of adolescent communication (concept-oriented family communication, peer surveillance norms, and classroom deliberation); informational media use (TV news, newspaper, conventional online news, and nonconventional online information); and interpersonal discussion and expression (face-to-face discussion and online political messaging).

At the center of the model is the notion of *citizen communication mediation*, wherein adolescents' engagement in political discussion with their peers and adults around them, both face-to-face and online, mediates the effects of news media use on civic engagement (Shah et al., 2005). The logic of this process remains intact, regardless of whether this media use and political talk is through conventional or online channels. The sequential order of the mediating process from media use, to citizen communication, and to civic engagement has been well supported by past studies using adult samples (e.g., Cho et al., 2008; Pan, Shen, Paek, & Sun, 2006; Shah et al., 2005, 2007). Our model postulates that the three key socializing agents—family, peers, and school—exert influence on this mediation process. In other words, our model specifies that parental, peer, and schooling factors influence civic engagement both directly and indirectly by spurring other communication behaviors. We include concept-oriented family communication, peer surveillance norms, and classroom deliberation as key variables that represent the core of communication competence. Our model asserts that the communication mediation processes that drive youth socialization are activated and strengthened through competencies gained in the family, peer groups, and classroom.

Further refining the past models of communication mediation, we distinguish emerging online information sources, such as political blogs, candidates' web sites, and online news magazines, from more conventional online news sources of mainstream news organizations (e.g., CNN.com and NYTimes.com). The critical distinction between these two types of online news sources is that the nonconventional online news sources tend to be more partisan, more opinionated, less journalistic, and more likely to contain mobilizing information than do the conventional online news sources. Consumption of opinions and commentary, rather than neutral reporting typical in more traditional news sites, may promote opinion expression and exchange among young people and facilitate political mobilization. Together with online forms of citizen communication (i.e., online political messaging), our model specifies more complete and contemporary routes through which communication promotes youth civic engagement.

Method

Data

We test the model by analyzing data from a two-wave national panel survey of adolescent-parent pairs. These survey data were collected from a single panel of respondents in two waves during 2008. The first wave was gathered between May 20 and June 25, 2008 by Synovate, a commercial survey research firm, using a four-page mailed questionnaire. The second wave was gathered from these same respondents between November 5 and December 10, 2008, again using a four-page mailed questionnaire. Synovate employs a stratified quota sampling technique to recruit respondents. Initially, the survey firm acquires contact information for millions of Americans from commercial list brokers, who gather identifying information from drivers' license bureaus, telephone directories, and other centralized sources. Large subsets of these people are contacted via mail and asked to indicate whether they are willing to participate in periodic surveys. Small incentives are offered for participation.

Rates of agreement vary widely across demographic categories. For example, 5% to 10% of middle class recruits typically consent, compared to less than 1% of urban minorities. It is from this prerecruited group of roughly 500,000 people that demographically balanced samples are constructed for collection. To achieve a representative pool of respondents, stratified quota sampling procedures are employed. That is, the sample is drawn to reflect the properties of the population within each of the nine Census divisions in terms of household income, population density, age, and household size. This starting sample is then adjusted within a range of subcategories that include race, gender, and marital status to compensate for expected differences in return rates (see Shah et al., 2005 for details).

For the purposes of this study, this technique was used to generate a sample of 4,000 households with children aged 12 to 17. A parent in each selected household was contacted via mail, asked to complete an introductory portion of the survey and then to pass the survey to the 12- to 17-year-old child in the household who most recently celebrated a birthday. This child answered a majority of the survey content and then returned the survey to the parents to complete a closing portion and return the survey. Of the 4,000 mail surveys distributed, 1,325 responses were received in Wave 1, which represents a response rate of 33.1% against the mailout. Due to incomplete or inconsistent information, about 5% of the received responses were omitted. This deletion was necessary to ensure the quality of responses and the biasing effect of deleting a small proportion (say, 5% or less) of cases has been shown to be minimal (Little, 1992; Schafer, 1997). As a result of these omitted responses, 1,255 questionnaires were mailed out on November 4. Of the recontact surveys distributed, 738 were returned, for a panel retention rate of 55.7% and a response rate against the mailout of 60.4%. Due to some mismatches in the age of the child within the household who completed the first and second survey, 163 respondents were dropped.[2]

To see if our final panel might be subject to selection bias, we compared those respondents who were included in our final panel (*n* = 575) with those who completed only our first-wave survey (*n* = 517). Our final panel respondents were not different from our first-wave-only

participants in terms of age, gender, parental education, and other demographic and political orientations. The only difference we found was in household income, with our final panel respondents being slightly lower than our first-wave-only respondents.

In addition, we compared our final panel respondents with the second wave respondents whose responses were discarded in the panel data analysis due to mismatches of their personal information between the two waves of data collection (*n* = 163). Of these two groups of our second-wave respondents, those who were included in our final panel were more likely to be White and stronger in political ideology than those who were not. However, our final panel respondents were not different in terms of other demographic and social-structural variables from those second wave respondents whose responses were dropped from the panel analysis. With the proper controls, we have little reason to believe that the nature of the relationships among our key variables is different in the general population than it is in our matched panel respondents.

Measurement

Five groups of variables were created from the two waves of our panel data: (a) civic engagement (civic participation and political participation) as our outcome variables; (b) citizen communication (face-to-face discussion and online political messaging); (c) news media use (TV news, newspaper, conventional online news, and nonconventional online information); (d) variables tapping family, peer, and school influences (concept-oriented family communication, peer surveillance norms, and classroom deliberation), and (e) control variables (Table 1 provides descriptive statistics. For full question wording and reliability estimates, see the appendix.).

Civic engagement. Civic participation, which refers to involvement in community service activities, was measured by asking adolescent respondents the frequency with which they engaged in charity work, volunteering, and community projects. Similarly, political participation was measured by four behavioral items asking adolescents' electoral campaign participation through monetary contributions, event attendance, campaign volunteerism, and political displays.

Citizen communication. We examined two modes in which citizens express and exchange their political ideas: face-to-face and online. Face-to-face interpersonal discussion consisted of two items asking adolescent respondents how often they talked about news and current events with friends and with adults outside their family.[3] Online political messaging was assessed by five items asking how often respondents shared and expressed their political views through new interactive media such as emails, text messaging, web links, and social networking sites.

News media use. To measure adolescents' consumption of news content and their exposure to campaign information, we assessed the frequency with which adolescents use the following four categories of information sources, two offline (TV news and newspapers) and two online (conventional online news sources, and nonconventional online news sources). First, TV news viewing was tapped by two items assessing adolescent respondents' exposure to national network news and local news programming. Second,

Table 1. Descriptive Statistics of Key Measured Variables and Their Standardized Factor Loadings Estimated in Confirmatory Factor Analysis

Scales and items	Range		M (SD)		Factor loadings	
	Min	Max	Wave 1	Wave 2	Wave 1[b]	Wave 2[c]
Civic participation						
Raised money for a charitable cause	1.00	8.00	2.88 (2.20)	2.54 (2.03)	.79	.87
Did volunteer work	1.00	8.00	3.72 (2.52)	3.41 (2.44)	.71	.76
Worked on a community project	1.00	8.00	2.81 (2.32)	2.61 (2.22)	.85	.77
Political participation						
Contributed money to a political campaign[a]	0.00	1.00	0.09 (0.29)	0.09 (0.29)	.96	.99
Attended a political meeting, rally, or speech[a]	0.00	1.00	0.11 (0.31)	0.13 (0.34)	.95	.89
Worked for a political party or candidate[a]	0.00	1.00	0.06 (0.24)	0.07 (0.26)	.99	.98
Displayed a political campaign button/sticker/sign[a]	0.00	1.00	0.17 (0.37)	0.29 (0.45)	.90	.82
Concept-oriented family communication						
In our family:						
kids are often asked their opinions . . . (parent)	1.00	5.00	3.85 (0.93)	—	.57	—
kids learn it's OK to disagree . . . (parent)	1.00	5.00	3.75 (0.96)	3.87 (0.97)	.53	.55
kids are often asked their opinions . . . (adolescent)	1.00	5.00	3.52 (1.12)	—	.46	—
kids learn it's OK to disagree . . . (adolescent)	1.00	5.00	3.69 (1.03)	3.78 (1.02)	.52	.81
Peer surveillance norms						
Among my friends, it is important to know what's going on in the world.	1.00	5.00	3.42 (1.06)	3.53 (1.07)	1.00	1.00
Classroom deliberation						
Discussed/debated political or social issues . . .	1.00	8.00	3.85 (2.49)	3.88 (2.40)	.78	.86
Participate in political role playing in class . . .	1.00	8.00	2.40 (2.10)	2.68 (2.30)	.73	.75
Encouraged to make up your own mind . . .	1.00	8.00	4.09 (2.51)	4.20 (2.52)	.70	.79

Table 1. (continued)

Scales and items	Range		M (SD)		Factor loadings	
	Min	Max	Wave 1	Wave 2	Wave 1[b]	Wave 2[c]
TV news						
National nightly news on CBS, ABC, or NBC	0.00	7.00	1.47 (2.04)	1.81 (2.22)	.77	.91
Local news about your viewing area …	0.00	7.00	1.95 (2.21)	2.35 (2.31)	.91	.79
Newspaper						
A print copy of a local newspaper	0.00	7.00	1.84 (2.18)	2.00 (2.23)	1.00	1.00
Conventional online news						
National newspaper web sites (nytimes.com)[a]	0.00	1.00	0.19 (0.39)	0.16 (0.37)	.83	.84
TV news web sites (cnn.com, foxnews.com)[a]	0.00	1.00	0.24 (0.43)	0.25 (0.44)	.81	.84
Local newspaper web sites[a]	0.00	1.00	0.21 (0.41)	0.26 (0.44)	.82	.80
Nonconventional online information						
Conservative political blogs[a]	0.00	1.00	0.03 (0.17)	0.07 (0.25)	.88	.86
Liberal political blogs[a]	0.00	1.00	0.04 (0.19)	0.05 (0.22)	.86	.85
Political candidates' web sites[a]	0.00	1.00	0.09 (0.29)	0.13 (0.33)	.83	.92
Face-to-face discussion						
Talked about news and current events with friends	1.00	8.00	3.65 (2.04)	4.27 (2.18)	.83	.85
Talked about news and current events with adults …	1.00	8.00	3.00 (2.02)	3.36 (2.13)	.77	.82
Online political messaging						
Exchanged political emails with friends and family[a]	0.00	1.00	0.12 (0.32)	0.22 (0.42)	.90	.89
Forwarded the link to a political video/news article[a]	0.00	1.00	0.12 (0.32)	0.20 (0.40)	.93	.93
Received a link to a political video/news article[a]	0.00	1.00	0.18 (0.38)	0.26 (0.44)	.89	.88
Sent or received a text message about politics[a]	0.00	1.00	0.12 (0.32)	0.27 (0.45)	.90	.78
Exchanged political views on a discussion board[a]	0.00	1.00	0.11 (0.31)	0.14 (0.35)	.79	.76

[a]Treated as dichotomous categorical variables in confirmatory factor analysis. $1{,}247 \leq N \leq 1{,}290$ for Wave 2 and $562 \leq N \leq 574$ for Wave 2.
[b]$\chi^2 = 748.62$, $df = 675$, $p = .03$, CFI = .98, TLI = .97, RMSEA = .01 (Confirmatory factor model for Wave 1).
[c]$\chi^2 = 724.18$, $df = 592$, $p < .001$, CFI = .98, TLI = .97, RMSEA = .02 (Confirmatory factor model for Wave 2).

newspaper reading was measured by a single item tapping exposure to a print copy of a local newspaper.[4] Third, conventional online news use, which refers to adolescents' consumption of online news via web sites of mainstream news organizations, consisted of three items assessing the number of days in a typical week respondents visited web sites of national newspaper, TV news, and local newspapers. Finally, nonconventional online information taps adolescents' exposure to political information via online information sources outside the mainstream media such as blogs and candidate web sites. We measured this using three items asking the numbers of days in a typical week respondents visited conservative or liberal political blogs, and political candidates' web sites.

Parental, peer, and schooling influences. We constructed three variables to assess influences stemming from concept-oriented family communication patterns, peer surveillance norms, and classroom deliberation. Concept-oriented family communication was measured by the degree of agreement with statements regarding children's input on family decisions and the acceptance of disagreement between kids and adults. Responses from both adolescent- and parent-respondents were combined to create the index of concept orientation items.[5]

Although various social norms may regulate adolescents' behavior, we focused on peer norms about surveillance of current affairs. Peer surveillance norms, which concern the extent to which adolescents perceive their peers as valuing knowledge about current affairs, were measured by a single item asking the degree of agreement to the corresponding statement.

Classroom deliberation was comprised of three questions gauging the extent to which our adolescent respondents experienced open climate for classroom discussions involving social or political issues, and participated in civic simulations such as mock trials and elections.

Control variables. We employed extensive controls to isolate the effects stemming from demographics (age, sex, race, strength of partisanship), family background (household income, shared partisanship between parent and child, educational attainment of mother and father, marital status of parents, home media environment in terms of multichannel TV and high-speed Internet), community integration (years of residence, church attendance, and size of friendship network), and residence in a battleground state. These control variables were measured only once in Wave 1 and were treated as exogenous to the communication mediation models to be tested (see the appendix for details on variable construction).

After inspecting the distributions of each measured item, we found that the items for four variables (political participation, conventional online news, nonconventional online information, and political messaging) exhibited a considerable skewness to the right. Since most of our statistical tests relied on normality assumptions, we transformed these items using dichotomizations (i.e., 0 = *no*, 1 = *yes*) and treated them as categorical indicators to provide a conservative test for our hypothesized relationships.

Analysis Strategy

Usually, mediation is tested by examining variables and paths individually (Baron & Kenny, 1986; MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). However, since our

proposed mediation model involves multiple mediating relationships that are interdependent with each other, simultaneous testing of multiple mediators is preferred over testing of each mediating relationship individually (Preacher & Hayes, 2008). Structural equation modeling (SEM) techniques, which analyze the relationships among variables as chains of direct and indirect linear paths, allow us to assess the strength of each antecedent variable on the outcome variables accounting for all other variables included as antecedents in the model.

To take advantage of our panel data, we employed an autoregressive panel model where the change is estimated by regressing a variable to its prior value (Joreskog, 1979). Thus change is represented as the extent to which a variable departed from that variable's prior levels that are determined on the basis of the sample as a whole. Basically, this model estimates the structural relationships among the variables measured in Wave 2, after accounting for the stability in these variables between the two waves of our data collection. Because this model concerns only changes between the two time points, it removes any stable confounding effects from unmeasured time-invariant predictors. This feature of the model enables researchers to better handle spuriousness and omitted variable bias (Finkel, 1995; Halaby, 2004).

An additional advantage of using SEM is that it can incorporate measurement error in the model, thereby adjusting its biasing effects on path estimates. In the SEM framework, one can account for measurement error by estimating a latent variable model where each latent construct is measured by multiple, error-prone, manifest indicators. Although the use of latent variable models with multiple indicators is usually desirable, we decided not to use them in the present study. To estimate our hypothesized model (see Figure 1), we would need to build measurement models that involve 60 observed variables for our 22 endogenous latent variables as well as our 15 exogenous variables. Given the large number of parameters to be estimated relative to our sample size, estimating a latent variable model with this many measured variables would produce unstable results and potentially distort the model fit statics for the structural relationships due to the complexity of the measurement models. A latent variable model with a correctly specified measurement portion but an incorrectly specified structural portion (e.g., misrepresenting multiple mediating relationships) can still produce an acceptable fit statistic because the performance of the measurement model overrides the misfit of the structural model.

Because our primary purpose concerns the mediating relationships between the key socializing and communicative factors, we followed an alternative procedure to correct measurement error. This approach uses single-indicator latent variable models where each latent variable is represented by corresponding multi-item indices (i.e., mean ratings). The key feature that distinguishes this approach from regular path analysis is that it incorporates available information regarding the amount of measurement error of those multi-item indices (Bollen, 1987; Kenny, 1979). This procedure of measurement error correction proceeds in two stages. First, the appropriateness of the measurement model is assessed using confirmatory factor analysis. Second, the structural model is estimated among latent variables indicated by composite indices. The correction of measurement error is performed by equating the random error variance associated with each latent variable to the product of its variance multiplied by the quantity 1 minus its estimated Cronbach's alpha reliability (i.e.,
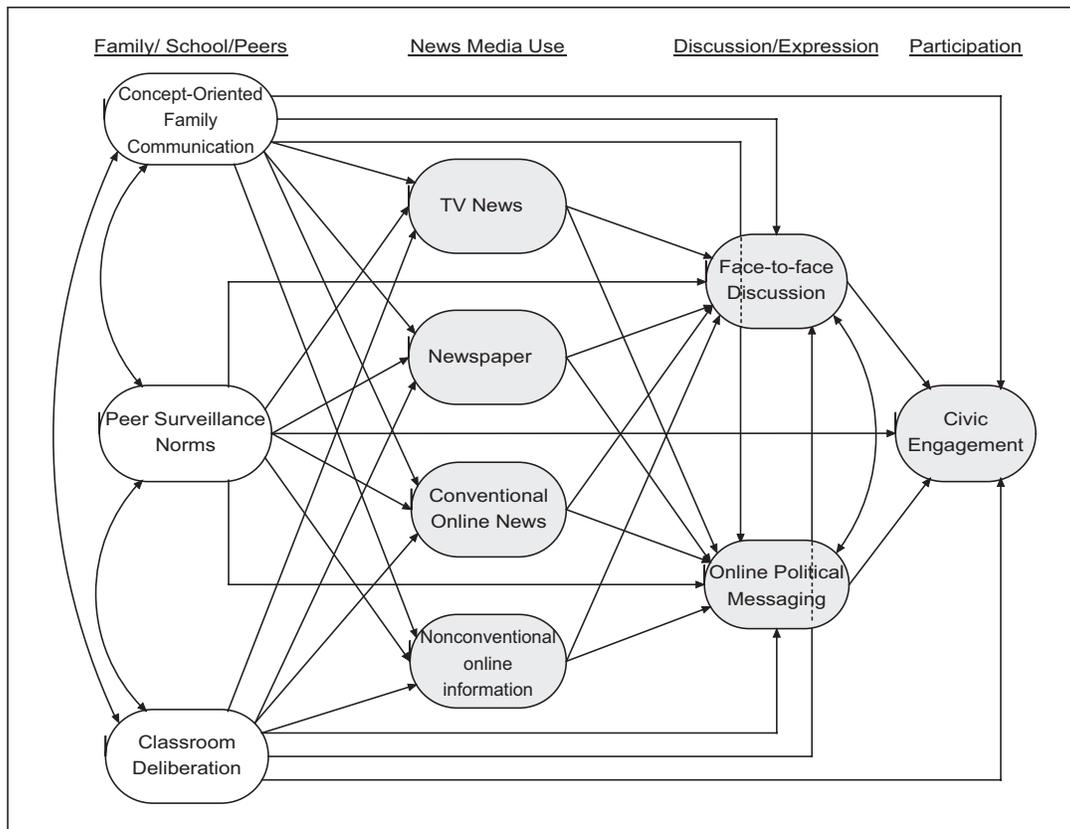
Figure 1. Theorized causal model of communication mediation for youth civic engagement

variance × [1—reliability α]). This amounts to fixing the path coefficients from each latent construct to its corresponding single-indicator (composite index) to the square root of its reliability. In this way, such latent variable models produce fit statistics of the structural model without any effect of the measurement, while accounting for the influence of measurement error. Past studies confirmed that the path coefficients estimated by this approach were virtually identical to those of the latent variables model in terms of direction, significance, and strength (e.g., Cohen, Vigoda, & Samorly, 2001; Netemeyer, Johnston, & Burton, 1990).

Results

Confirmatory Factor Analysis

To examine whether our multi-item indices are appropriate for our latent constructs, we first conducted confirmatory factor analysis using all the items included in the subsequent analysis. Confirmatory factor models were run separately for the Wave 1 sample (*N* = 1255) and the Wave 2 sample (*N* = 575). All the paths leading from our 15 exogenous

control variables to our entire endogenous latent variable were freely estimated.[6] The model fit was evaluated using the chi-square goodness-of-fit statistics, Bentler's Comparative Fit indices (CFI) and the Tucker-Lewis indices (TLI), and the root-mean-square error of approximation and standardized root mean residual (RMSEA) that have been shown to perform well across different sample sizes and distributions (Hu & Bentler, 1998, 1999).

Both the Wave 1 and the Wave 2 models produced chi-square goodness-of-fit statistics that were large enough for us to reject the null hypothesis that the model fits ($\chi^2 = 748.62$, $df = 675$, $p = .03$ for the Wave 1 analysis and $\chi^2 = 724.18$, $df = 592$, $p < .001$ for the Wave 2 analysis), thus indicating model misfit. However, these models yielded large values of incremental fit indices, such as CFI (.98 for both Wave 1 and Wave 2) and TLI (.97 for both Wave 1 and Wave 2), which are greater than the recommended threshold of .95 for a good fit (Hu & Bentler, 1999). In addition, RMSEA values (.01 for Wave 1 and .02 for Wave 2) that are much smaller than Hu and Bentler's recommended threshold value of .06 also indicate good model fit. Given the known high sensitivity of chi-square statistics to sample size and model complexity, we believe that the models fit the data fairly well. The factor loadings of each item on its corresponding latent factor are reported in Table 1.

Structural Equation Modeling

Using the single-indicator latent-variable approach to measurement error correction, two structural equation models were generated to test the theorized communication mediation models predicting civic participation and political participation, respectively, on the basis of repeated measurements from the two waves of our panel data collection, providing some sense of change (see Figure 2 and Figure 3). Only those respondents who completed both waves of surveys were included for the estimation of the autoregressive panel models ($N = 575$).

As discussed earlier, we estimated the structural relationships among our endogenous variables measured in Wave 2, while controlling for the paths leading from their lagged values of each endogenous variable measured in Wave 1 as well as from all the exogenous variables onto the endogenous variables. The autoregressive paths linking the repeated measures were all significant and ranged widely, from $\beta = .26$, $p < .001$ for online political messaging to $\beta = .66$, $p < .001$ for TV news (for more details, see the online appendix at http://www.journalism.wisc.edu/~dshah/resources.htm).

Autoregressive panel model for civic participation. Figure 2 presents an autoregressive panel model summarizing the structural relationships among family communication, peer surveillance norms, classroom deliberation, various types of news media use, public affairs discussion, online political messaging, and civic participation. The theorized model of communication mediation fits the data well, $\chi^2 = 4.32$, $df = 4$, $p = .36$, CFI = 1.00, TLI = .99, RMSEA = .01.

Contrary to expectations, concept-oriented family communication was not associated with any communication variables (i.e., traditional and online media use, political discussion, and online political messaging). The direct link leading from concept orientation to civic participation was not significant, either. Similarly, peer surveillance norms did not have a significant direct effect on civic participation. However, our results indicate peer norms
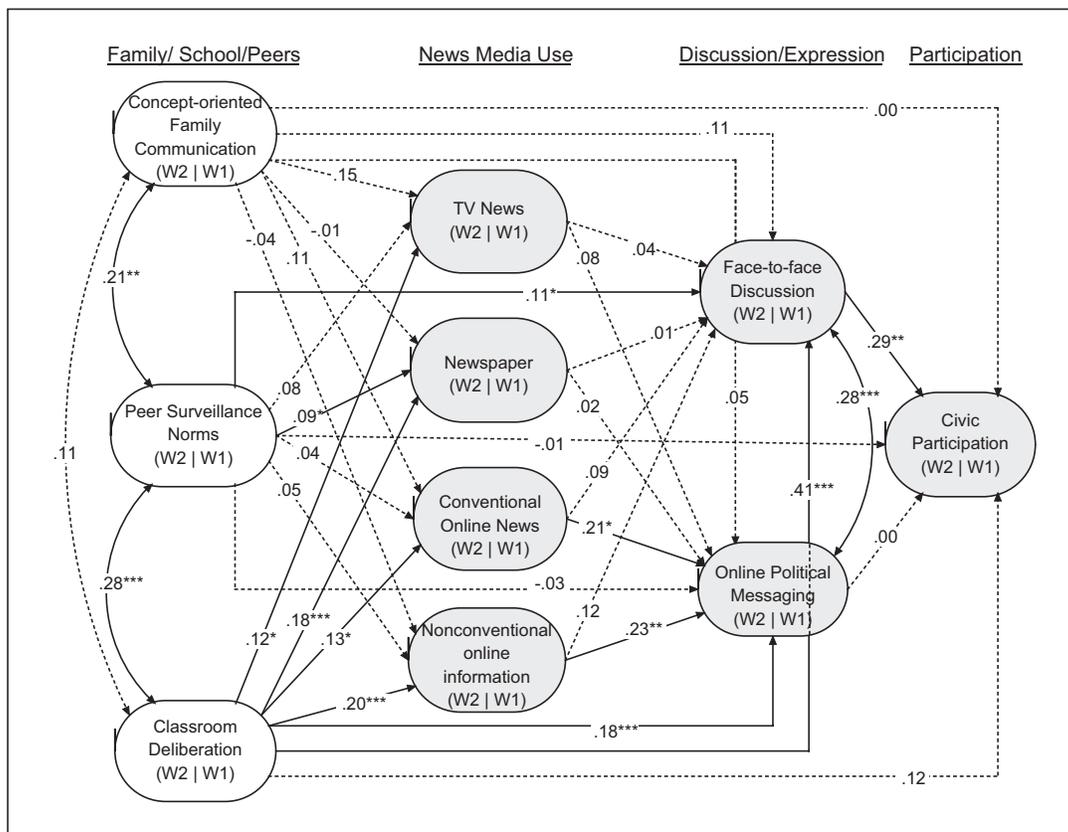
Figure 2. Autoregressive panel model of communication mediation for civic participation (Wave 1, Wave 2)
Note: $\chi^2 =$ **4.32**, $df = 4$, $p = .36$, CFI = 1.00, TLI = .99, RMSEA = .01. Only endogenous variables are shown. All displayed variables were measured in Wave 2 and regressed on their values in Wave 1 (these autoregressive paths are not shown). The paths from our exogenous variables (i.e., age, sex, race, strength of partisanship, household income, shared partisanship between parent and child, educational attainment of mother and father, marital status of parents, home media environment in terms of multichannel TV and high-speed Internet, years of residence, church attendance, size of friendship network, and residence in a battleground state) to the endogenous variables were estimated but are not displayed. Six bidirectional arrows between the four news media use variables denoting "unanalyzed correlations" were not displayed for the sake of simplicity.

appear to promote newspaper reading ($\beta = .09$, $p < .01$). In addition, peer norms also had a positive relationship with face-to-face discussion ($\beta = .11$, $p < .05$).

In particular, classroom deliberation was found to be positively associated with all the other endogenous variables included in the model, with the only exception being its direct link with civic participation. All these significant paths were robust and positive. Classroom deliberation was also positively correlated with peer norms at $\varphi = .28$, $p < .001$. The correlation between concept orientation and peer norms was $\varphi = .21$, $p < .01$, suggesting these socializing factors are interrelated with one another.

Overall, our results indicate that adolescents' use of offline traditional media is largely inconsequential. Neither TV news viewing nor newspaper reading was associated with citizen
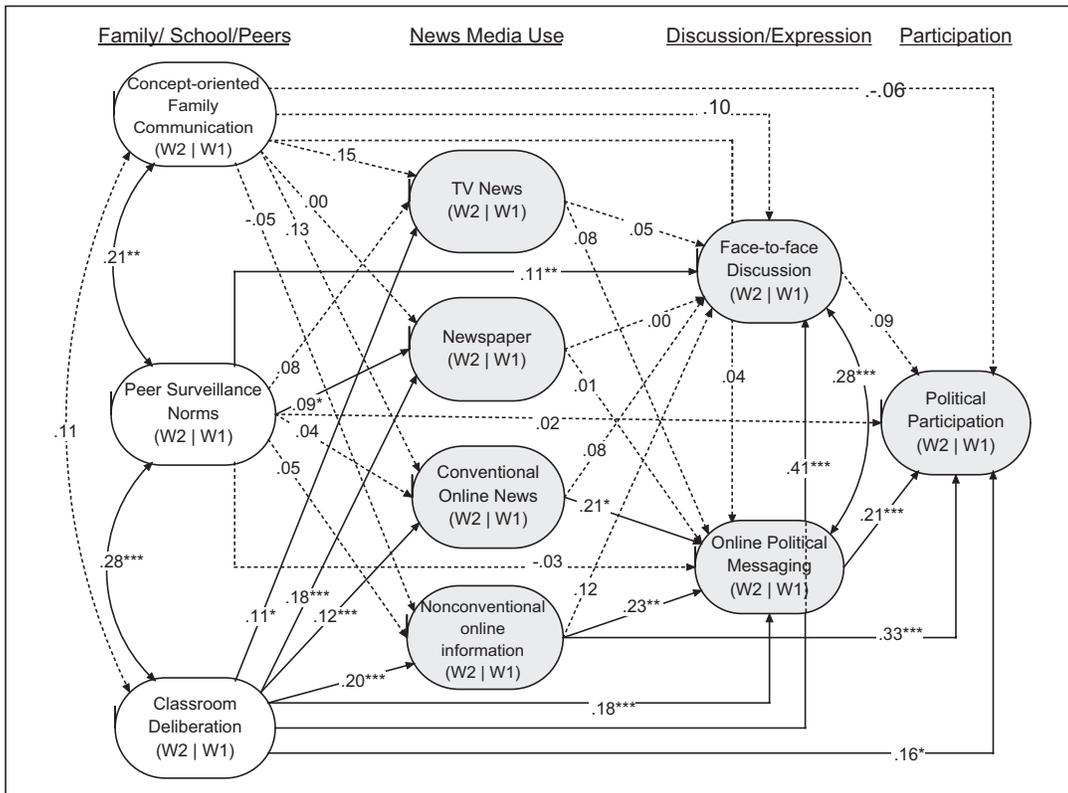
Figure 3. Autoregressive panel model of communication mediation for political participation (Wave 1, Wave 2)Note: $\chi^2 = 4.49$, $df = 3$, $p = .21$, CFI = 1.00, TLI = .93, RMSEA = .03. Only endogenous variables are shown. All displayed variables were measured in Wave 2 and regressed on their values in Wave 1 (these autoregressive paths are not shown). The paths from our exogenous variables (i.e., age, sex, race, party ID, strength of partisanship, household income, shared partisanship between parent and child, educational attainment of mother and father, marital status of parents, home media environment in terms of multichannel TV and high-speed Internet, years of residence, church attendance, size of friendship network, and residence in a battleground state) to the endogenous variables were estimated but are not displayed. Six bidirectional arrows between the four news media use variables denoting "unanalyzed correlations" were not displayed for the sake of simplicity.

discussion and expression, online or offline. However, we observed that informational use of online media, in both conventional ($\beta = 21$, $p < .05$) and unconventional ($\beta = .23$, $p < .01$) forms, was associated with online political messaging. Overall, our results indicate that online forms of media use turned out to be more consequential in encouraging discussion and expression.

The estimated model suggests that face-to-face discussion was related to a boost in civic participation ($\beta = .29$, $p < .01$). However, we failed to find such a positive relationship between online political messaging and civic participation ($\beta = .00$, *ns*).

Autoregressive panel model for civic participation. To examine the performance of the proposed model for the other indicator of civic engagement, we estimated the same structural model for political participation. Although the only change that was made to the previous

model was the replacement of civic participation by political participation as the final outcome variable, the model for political participation fits the data poorly, $\chi^2 = 36.36$, $df = 4$, $p < .001$, CFI = .99, TLI = .16, RMSEA = .12. All the modification indices and other model estimates indicated the existence of a direct path linking nonconventional online political information and political participation. After allowing this link to be estimated, we obtained substantially improved model fit, $\chi^2 = 4.49$, $df = 3$, $p = .21$, CFI = 1.00, TLI = .93, RMSEA = .03. The path estimates from this revised model are summarized in Figure 3.

Because this model shared all the variables—except for political participation—with the previous model for civic participation, the results largely replicate the ones from the previous model. However, a few different relationships were observed. First, whereas there was a strong direct link between online messaging and political participation ($\beta = .21$, $p < .001$), face-to-face discussion was not associated with political participation ($\beta = .09$, *ns*). Second, we observed a strong direct path linking nonconventional online information with political participation ($\beta = .33$, $p < .001$). By contrast, more traditional news use such as TV news viewing and newspaper reading were found to be inconsequential for political participation. Taken together, the structural relationships observed in the model clearly suggest that there are stronger online pathways to political participation than their offline counterparts.

Discussion

Our examination of the national panel survey of parent-child pairs—the Future Voters Study—confirms the contributions of deliberative activities in schools, democratic peer norms, news consumption, and citizen communication to the development of active citizens. However, this is not merely an important extension of past work among a population of adolescents—a notable finding in its own right—but a nuanced delineation of a broader, communicatively integrated process. These findings emphasize the centrality of communication, whether at school, among peers, or through the media, to youth engagement in civic and political life.

First, our analysis provides support that communication mediation helps to explain youth socialization into political life. Informational use of media stimulates youth discussion and expression, which in turn boosts civic and political participation. Results clearly indicate that information consumption through traditional and digital media works through citizen communication to encourage civic engagement. Our results also suggest that this system of communication mediation channels influences stemming from peers and schools onto civic engagement. More specifically, we found that peer norms boost civic engagement indirectly by stimulating informational use of media and citizen communication. In particular, our results clearly point to the important role of classroom deliberation for communication mediation.[7]

It is notable that many of these communication activities involve interpersonal exchange, which political communication scholars need to study more closely. It also speaks to the interdependence of these socializing agents and the ensuing communication processes. These factors are not simply correlated with one another. They seem to be mutually

dependent, where people learn to value being informed, seek information, and then share their views with others. This articulation and the feedback it produces may help crystallize understanding and highlight gaps in knowledge, which encourages further information seeking and conversational exchanges. Such mutual causation may be an important feature of these models, as may be reverse causation. Future research should consider this possibility and examine the context, content, and manner of such interactions. This may include exploring political conversation for turn taking, listening, and other forms of reciprocity in exchanges, whether online or offline.

These mediating relationships among the major socializing agents further suggest the interdependency among them. That is, the capacity of peer norms to boost civic engagement depends on its impact on political discussion within a social network. Likewise, the positive impact of classroom deliberation on civic engagement is partially mediated through their influences on various communication activities including news consumption and public-spirited discussion, both offline and online. This set of mediating relationships suggests that democratic peer norms and deliberative school activities foster skills, capacities, and motivations necessary for engaging in the subsequent search of relevant political information and the exchange of opinions among citizens on public issues, thereby strengthening communication mediation. In this way, the process of communication mediation strongly implies communicative competence.

Among the three socializing factors that were hypothesized to stimulate the communication variables, only classroom deliberation had significant direct effects on each of the subsequent communication variables. Its effect was particularly strong on the two discussion variables, perhaps modeling of debate and expression that are central elements of classroom learning applied outside the classroom. Classroom deliberation also emphasizes the utility of information in discussions and this may account for its significant association with all four forms of informational media. Classroom use of the Internet in searching for information may account for the particularly strong connections to online news and information. Future research might ask for more detailed information about the content of previous classroom learning to verify these influences of schooling on later communication behaviors.

Second, our results highlight the prominent role of the Internet in boosting youth civic engagement. We observed that the consumption of online information, in general, tends to exert a stronger influence on civic engagement than does traditional news use. The use of the Internet for expressing and sharing opinions and concerns (i.e., online political messaging) was found to be particularly consequential among young citizens. The potency of the Internet and other digital media becomes more noticeable when our results are contrasted with the past studies of communication mediation using adult samples, which found largely comparable online and offline pathways (e.g., Shah et al., 2005, 2007; Cho et al., 2008). Thus our findings underscore the potential of digital media, especially blogs and other interactive media outlets, to mobilize young people into more active engagement with civic and political life.

However, our results also suggest that not all factors contribute to each civic and political outcome. In contrast to past studies and to our own expectations, concept-oriented family communication fell short of a direct or indirect effect on civic engagement. Similarly,

news consumption through traditional media was found to be largely inconsequential in our panel analysis. In contrast, use of online media, both conventional and nonconventional, survived the strong autoregressive controls, enhancing online discussion and expression. Together with the strong direct path from nonconventional online information to political participation, this testifies to the predominant roles of online news sources in promoting civic and political activism among adolescents. Also worthy of note is that some online information sources include a dialogic element, such as blogs. As discussed above, future research might address the precise contribution of such interpersonal and interactive element to the cultivation of communication competence and civic commitment.

Although our data provide substantial support for the theoretical formulations presented here, there are important limitations of the research designs that generated this evidence. We have to admit that there are certain inadequacies in the measurements employed in this study. The media use may be the least developed part of the models. In particular, we failed to examine TV news use from cable channels such as CNN, Fox, and MSNBC. This problem may be furthered by the fact that we consider only exposure and not attention to news in traditional media. That particularly hurts our efforts to explore the effects of concept orientation. Additional analysis that is not formally reported here suggests that concept orientation directs attention to and encourages reflection about public affairs news content but not frequency of watching TV news and reading local newspapers. The connection of peer norms to TV news, newspapers, and online news may indicate that these norms lead to an interest in news content rather than to specific sources of news. Since our data did not allow us to directly compare our adolescent sample with adult ones, future research should ascertain whether the digital pathways are only prominent among adolescents or established among young adults. More complete testing of mediation ideally requires three waves of panel data to address the temporal order of the mediating relationships (Cole & Maxwell, 2003). Again, this should be a focus of future inquiries.

It is also important to note that we proposed the notion of communication competence as a mega-concept, a collection of smaller concepts, represented *indirectly* by and derived from a range of indicators of family communication patterns, deliberative activities in school, news media use, and interpersonal discussion. Future research should further explicate this rich concept and develop proper ways to *directly* measure it, and ultimately, to examine the mediating influence of this concept linking commutative activities and democratic outcomes.

Despite some limitations, our analysis provides a range of important insights and a new way of modeling various influences on youth civic engagement. We have presented a communication mediation model of youth civic engagement in which interdependent communication processes located in the family, schools, media, and peer networks combine to produce communication competence in youth. Communication competence promotes continued political learning and sustained patterns of civic and political activism throughout the life course. The mediated processes of youth mobilization activated through deliberative process in the school and norms of news use among peers works through media and conversation to cultivate civic and political activism among adolescents. Our study provides an overall test of the conceptual model we outlined, yet leaves much that can still be

tested. Scholarship needs to examine more specific relationships among the factors in the model or other potentially relevant factors, such as a range of psychological variables thought to further mediate the relationship between discussion and participation (e.g., knowledge, reflection, efficacy, and cognitive complexity). Efforts to extend our theories and testing of effects beyond an O-S-O-R model have been proposed and tested in recent years (see Shah et al., 2007; Cho et al., 2008). Research on political socialization would benefit from such efforts.

Appendix

Question Wording

Demographics
    Age: Exact age of the adolescent respondents
    Sex: Coded as 1 = *female*, 0 = *male*
    Race: White, Black, Native American, Asian, Pacific Islander, Multiracial; Coded as dummy variable "White."
    Strength of Partisanship: No answer (0), Independent (1), Democrat or Republican (2), Strong Democrat or Strong Republican (3)

Family background
    Shared partisanship (parent-child): Coded 1 if parent and child share political party identification, else = 0.
    College graduate (mother): Coded 1 if the mother of an adolescent respondent graduated college, else = 0.
    College graduate (father): Coded 1 if the father of an adolescent respondent graduated college, else = 0.
    Divorced or separated (parents): Coded 1 if an adult respondent is a divorced or separated parent.
    Household income: 1 (*Less than US$5,000*), 2 (*US$5,000-US$7,499*), 3 (*US$7,500-US$9,999*), 4 (*US$10,000-US$12,499*) . . . 24 (*US$175,000-US$199,999*), 25 (*US$200,000-US$250,999*), 26 (*US$250,000- US$299,999*), 27 (*US$300,000 and over*).
    Multichannel home: Coded 1 if expanded cable or premium (pay) channels in the household, else = 0.
    High-speed Internet at home: Coded 1 if the respondents have high-speed Internet access at home, else = 0.

Social Integration
    Years of residence
        How long have you lived in your current residence? _____ years

    Church attendance: 1 (*Not at all*)—8 (*Very frequently*)

For each activity listed below, please place an "X" in the appropriate box to indicate how frequently during the past 6 months you have engaged in this activity (If you have not taken part in one of the listed activities during the past 6 months, "X" the "Not at all" box for that activity).

Attended church or place of worship

Size of friendship network
How many close friends do you have these days, people you feel at ease with and can talk to about private matters? _____ friends

Residence in a battleground state: Coded 1 if the respondent reported living in one of the states specified as "battleground states" by CNN.com (see www.cnn.com/ELECTION/2008/battleground/); otherwise, coded 0.

Concept-oriented family communication: 1 (*Strongly disagree*)—5 (*Strongly agree*)
(Cronbach's α = .70 for Wave 1; interitem $r = .43$, $p < .001$ for Wave 2).

In our house, kids are often asked their opinions about family decisions
In our family, kids learn it's OK to disagree with adults' ideas about the world

Peer surveillance norms: 1 (*Strongly disagree*)—5 (*Strongly agree*)
Among my friends, it is important to know what's going on in the world.

Classroom deliberation: 1 (*Not at all*)—8 (*Very frequently*)
(α = .78 for Wave 1; α = .84 for Wave 2).
Discussed/debated political or social issues in class
Participate in political role playing in class (mock trials, elections)
Encouraged to make up your own mind about issues in class

News consumption
TV news
How many days you watch that kind of programming (see examples) in a typical week by placing an "X" in the appropriate box? (0-7 days)
(interitem $r = .68$, $p < .001$ for Wave 1; $r = .71$, $p < .001$ for Wave 2).

National nightly news on CBS, ABC, or NBC
Local news about your viewing area (5:00 p.m., 6:00 p.m., or 10:00 p.m.)

Newspaper
Now I'd like to know how often you consume the following types of media content (see examples below). For each type listed, tell us how many days you use media in that way in a typical week by placing an "X" in the appropriate box. (0-7 days)

A print copy of a local newspaper

Conventional online news: 0 (*No*)—1 (*Yes*)
(Kuder-Richardson formula 20 [KR-20] = .66 for Wave 1; KR-20 = .69 for Wave 2).
National newspaper web sites (nytimes.com, usatoday.com)
TV news web sites (cnn.com, foxnews.com)
Local newspaper web sites

Nonconventional online political information: 0 (*No*)—1 (*Yes*)
(KR-20 = .71 for Wave 1; KR-20 = 71 for Wave 2).
Conservative political blogs (Instapundit, Michelle Malkin)
Liberal political blogs (Daily Kos, Talking Points Memo)
Political candidates' web sites

Citizen Communication
Face-to-face discussion: 1 (*Not at all*)—8 (*Very frequently*)
Talked about news and current events with friends
Online political messaging: 0 (*No*)—1 (*Yes*)
(KR-20 = .84 for Wave 1; KR-20 = .80 for Wave 2).
Exchanged political emails with friends and family
Forwarded the link to a political video or news article
Received a link to a political video or news article
Sent or received a text message about politics
Exchanged political views on a discussion board or group wall (of a social networking site)

Civic participation: 1 (*Not at all*)—8 (*Very frequently*)
(α = .83 for Wave 1; α = .85 for Wave 2).
Raised money for a charitable cause
Did volunteer work
Worked on a community project

Political participation: 0 (*No*)—1 (*Yes*)
(KR-20 = .84 for Wave 1; KR-20 = .80 for Wave 2).
Contributed money to a political campaign
Attended a political meeting, rally, or speech
Worked for a political party or candidate
Displayed a political campaign button, sticker, or sign

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Authors' Note

Declaration of Conflicting Interests

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Notes

1. This communication mediation model shares with two-step flow theories of press influence (Katz & Lazersfeld, 1955) the idea that communication among citizens largely mediates the effects of news consumption on engagement. However, the notion of communication mediation is less about opinion leaders influencing others through conversation and more about the centrality of expression and discussion for the distillation of ideas encountered in the news for all individuals.
2. The final sample for the 12 to 17 panel was $N = 575$, with about a third of the mismatches due to the adolescent respondents failing to provide information on their age either in the first wave or second wave.
3. We did not include public affairs discussion within a family for the measure of interpersonal discussion because family discussion is closely related with concept-oriented family communication both conceptually and empirically.
4. In addition to local paper readership, we also measured national newspaper readership to assess newspaper use. However, we decided not to use this item because the level of national newspaper readership was very low ($M = .51$ days per week) and because it was only moderately correlated with local newspaper readership ($r = .30$, $p < .001$ for Wave 1; $r = .24$, $p < .001$ for Wave 2).
5. Due to space limitations, we assessed only the input on family decisions item in Wave 2.

6. Because of similarity in question wording, our confirmatory factor models allowed measurement errors to be correlated between responses from adolescent respondents and those from parent-respondents to the same items of concept-oriented family communication, between the conservative blog use and the liberal blog use items for nonconventional online information, and between the two items of online political messaging that concern "forwarding" and "receiving" political web links.

7. Although the ordering of the citizen communication mediation model received substantial empirical support from studies using adult samples (e.g., Shah et al., 2005, 2007), we tested alternative sequencing of the key variable clusters in our communication mediation models. More specifically, we compared the sequential ordering of our hypothesized models (i.e., family/peer/school → news media use → discussion/expression → civic engagement) with the following alternative orderings of causal sequence in terms of model fit:

   (a) family/peer/school → news media use → civic engagement → discussion/expression; (b) family/peer/school → discussion/expression → news media use → civic engagement; (c) family/peer/school → discussion/expression → civic engagement → news media use; (d) family/peer/school → civic engagement → news media use → discussion/expression; and (e) family/peer/school → civic engagement → discussion/expression → news media use.

   Of all these model sequences tested, our hypothesized model, along with the fifth model, turned out to be the best-fitting model. In fact, our model and the fifth specification are mathematically equivalent to each other, thus providing the same set of model fit indices. Although we cannot differentiate our model from this alternative specification indicating reverse causation in terms of statistical performance, we believe our hypothesized one is more plausible given substantial evidence indicating the positive influence of information on participation (Shah et al., 2005; Pan et al., 2006).

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