Article

Young Citizens, Social Media, and the Dynamics of Political Learning in the U.S. Presidential Primary Election

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Abstract

This study explores political learning among young adults during the 2016 U.S. presidential primary elections. We are interested in how the rise of digital and social media is affecting the ways young adults learn about political events as they happen. Using a rolling cross-section survey design, we surveyed a unique sample of American young adults every day for a period of 3 weeks. This method allows us to ask participants about breaking news events as they occur, and to connect knowledge of current events to self-report of media use during a very short time period. We examine the relationship between media exposure and political learning using both self-report media exposure measures and measures of the volume of attention to political events in the news media and via social sharing of news on Facebook. Results suggest that social media volume, not self-reports of exposure, was key in providing young adults with the opportunities to learn about politics during the 2016 U.S. primary season.

Keywords

survey, news exposure, political knowledge, young adults, Facebook

Political knowledge is a central construct in the study of democratic engagement, but it is one that offers scholars a number of puzzles. A large body of literature contains debates over what and how much citizens should know, where they should learn it, and

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how best to measure what they know (Lupia, 2016). Despite these challenges, we care about political knowledge because it predicts of a wide array of normatively valuable democratic outcomes. Those who are more knowledgeable are more likely to participate and to do so in ways that represent their interests (Delli Carpini & Keeter, 1996). Research on political knowledge has well established *who* among the citizenry tends to be knowledgeable: Men tend to be more knowledgeable than women, the rich are more knowledgeable than the poor, and those with higher levels of education are more knowledgeable than those with lower.

The question of *how* citizens gain that knowledge—through what processes and pathways—remains somewhat more elusive. Few citizens learn about political events through direct experience, so media and communication processes should be of central importance. There are many studies that find positive relationships between news media exposure and knowledge, but the strength of those relationships is typically weak (Eveland, Hayes, Shah, & Kwak, 2005; Eveland & Schmitt, 2015; Price & Zaller, 1993). Yet studies connecting the volume of media coverage an issue receives with levels of knowledge among the public find somewhat stronger effects (Barabas, Jerit, Pollock, & Rainey, 2014; Iyengar, Hahn, Bonfadelli, & Marr, 2009; Jerit, Barabas, & Bolsen, 2006).

Challenges for studying political knowledge are only growing in the high-choice media environment (Prior, 2007). Younger adults have very different media use repertoires than older generations (Edgerly, 2015). Facebook, for example, is the most common source of political information for young adults, compared to local television among older adults (Gottfried & Barthel, 2015). Understanding how young adults are situated within media streams that provide them with different opportunities to learn about politics is important not only for the study of knowledge acquisition but for the future of informed engagement and decision making.

This article makes two contributions to the existing literature on media use and political knowledge. First, we measure political learning during the 2016 primaries using a rolling cross-section design, interviewing a unique sample of American young adults every day for 3 weeks. This method allows us to ask participants about breaking political events as they happen, and therefore to model connections between learning and media use during a very short time period. Second, we compare the effect of self-reported media use on learning to measures of the volume of attention to specific events on television news, in newspapers, and via news stories shared on Facebook. This second approach allows us to investigate the relative impact of the broadcast news media environment compared with the social stream in terms of knowledge acquisition among young citizens.

Literature Review

Where Does Political Knowledge Come From?

Political knowledge has received significant attention from scholars looking to explain why some individuals in a society are more informed than others. One prominent

framework points to three interlocking factors: ability, motivation, and opportunity (Delli Carpini & Keeter, 1996; Prior, 2007). Knowledge occurs when (a) individuals have the ability to process and retain information about politics, (b) they are motivated to learn, and (c) they have the opportunity to consume political information.

Most knowledge studies capture the ability factor via the proxy of education. Education is linked to the development of cognitive structures that enable effective information processing and retention. Literature exploring knowledge gaps shows that those with higher levels of education gain more from the same amount of exposure to political content (Kwak, 1999). As a result, educated individuals have a greater capacity to learn about politics. Barabas et al. (2014) describe the role of education as the "'800-pound gorilla' in research on political knowledge" (p. 842).

Even if a person is able, those motivated to seek out, process, and retain political information will learn more than those who are not motivated. Eveland (2001) found that those who are motivated to seek out information about their environment learn more from news exposure than those who use news with other motivations. Motivation explains why individuals with an interest in politics consistently exhibit higher levels of political knowledge (Delli Carpini & Keeter, 1996; Fraile & Iyengar, 2014), and why partisans tend to know more about partisan-related facts (Jerit & Barabas, 2012). Motivation, however, can also backfire in the case of partisans, who are also motivated to not believe facts that challenge their partisan identity (Taber & Lodge, 2006).

The opportunity factor refers to the extent to which political information is available to individuals. Both interpersonal communication and mass media are important sources of political information, and there are consistent findings of a relationship between political knowledge and political talk (Eveland et al., 2005; Price & Zaller, 1993). As we detail below, findings are more mixed in studies attempting to connect news media use to levels of political knowledge.

New Media, New Opportunities

According to Fraile and Iyengar (2014), "the exercise of informed citizenship requires not only motivated citizens but also a media environment that provides an abundant supply of news" (p. 275). Previous research on the relationship between media exposure and political knowledge has adopted two distinct methodological approaches. The first is to connect individual-level measures of political knowledge with self-reported rates of media use. While these studies do find positive relationships between news use and political knowledge, the strength of the relationships tend to be weak (Eveland & Schmitt, 2015). In addition, distinct streams of media content appear to have different effects on knowledge (Lee & Yang, 2014). Newspapers, for example, are more informative than television news (Druckman, 2005). Specific sources of news can also have different effects on knowledge. Several studies have found that *Fox News* consumption is related to lower levels of knowledge (Kull, Ramsay, & Lewis, 2003; Pew Research Center, 2007; PublicMind Poll, 2012), possibly because

the commitment of this source to an ideological slant preempts its presentation of all relevant, fact-based, information.

Knowledge studies have also begun to consider the role of social media sites in facilitating political learning. These sites blend elements of mass media dissemination with interpersonal communication. Evidence regarding the impact of social media on political knowledge is mixed. Bode (2016) found that while participants in an experiment *could* learn from political posts on social media when they were exposed to them, survey results suggested that political learning from social media is not a common occurrence (see also Dimitrova, Shehata, Strömbäck, & Nord, 2014).

A second methodological approach relating media exposure to levels of knowledge replaces self-reported media use with contextual measures of the volume of coverage given to particular issues or events in the news. The greater the volume of coverage, the greater the opportunity for the public to learn about an issue. Jerit et al. (2006) used this aggregate approach and found that knowledge about political events was strongly related to the total volume of media attention to that event: The correlation between individual knowledge items and volume of media attention ranged between .50 and .63. More recently, Barabas et al. (2014) found that volume of media coverage has the strongest effect on knowledge of recent political events, suggesting that time is an important factor in studies of media use and political knowledge.

Few studies, however, compare the relationships of self-reported use of specific media channels and political learning with volume-based measures of media coverage. Today's high-choice media environment results in increased idiosyncrasies across individuals in the rate and mode through which they encounter political information (Thorson & Wells, 2016). And yet much of what we know about media effects on political learning comes from the broadcast media era, and focuses on comparisons among newspaper, network television, and radio news use in providing individuals with opportunities to acquire political knowledge (Delli Carpini & Keeter, 1996; Eveland, 2001; Kwak, 1999). As such, it is important for contemporary studies of political learning to account for shifting patterns of media usage among citizens today.

The 2016 U.S. Primary Election

Our focus in this study is on young adults and a specific type of political learning: acquiring knowledge of recent political events, or what Delli Carpini and Keeter (1996) have called "surveillance facts." Different from a static, civics-based dimension of political knowledge involving the rules and processes that govern the political system, surveillance knowledge involves the uptake of facts that have only recently come into being (Barabas et al., 2014). Whereas past studies have approached surveillance knowledge as it pertains to events occurring over a broad timeframe—typically months or even years (Eveland, 2001; Jerit et al., 2006; Prior, 2007)—our focus is on whether and how young adults learn about events that occurred in the past week.

The context for our study is the 2016 U.S. presidential primary election season. Chaffee, Zhao, and Leshner (1994) described campaign coverage in the media as "a massive national civics course" (p. 305). The 2016 primary election was characterized

by a competitive nomination race within both political parties, in which young adult participation was relatively high (CIRCLE, 2016). This specific context provides an intriguing test of knowledge acquisition, especially as it relates to the role of individual differences among young adults and the larger information environment.

Young Adults and Political Learning

Our first sets of expectations are related to the ability and motivation to gain political knowledge. We expect education to be a positive predictor of political learning (Kwak, 1999), as should political interest (Fraile & Iyengar, 2014). Partisanship should also be related to learning about primary events because partisans will need to make a voting decision among their party's candidates (Delli Carpini & Keeter, 1996).

Hypothesis 1: Education, political interest, and respondents' partisanship will each be associated with higher levels of surveillance knowledge.

Beyond ability and motivation, our main goal is to consider opportunities to gain knowledge through exposure to various sources of media and interpersonal communication. It is an open question as to *which* communication sources play the most important role in primary campaign learning among young adults. Given the shifts in media use preferences and patterns among young adults (Edgerly, 2015; Gottfried & Barthel, 2015; Taneja, Wu, & Edgerly, 2017), it may be that newer digital and social media sources, both specific sources like BuzzFeed that are popular among younger audiences and news stories delivered via social media platforms such as Facebook, provide more opportunities for young adults to learn about political events, compared with traditional news sources. Given this, we test three hypotheses reflecting different media opportunities to gain knowledge.

Hypothesis 2: Political discussion with peers and family will be positively associated with surveillance knowledge.
Hypothesis 3: Use of mainstream news media channels will be positively associated with surveillance knowledge.
Hypothesis 4: Use of digital-only and social media news sources will be positively associated with surveillance knowledge.

We may also observe growing differentiation in political learning, such that use of certain types of media leads to acquisition of certain types of knowledge. Most of all, exposure to partisan news streams (either liberal or conservative) may provide a greater opportunity to learn more about the events relevant to one party than about the other.

Hypothesis 5: Consumption of partisan news sources will be associated with higher levels of surveillance knowledge about the party favored by the news sources.

As noted above, an alternative methodological approach is to examine the relationship between political learning and the volume of attention to political issues and events in the larger media environment (Barabas et al., 2014; Jerit et al., 2006). Therefore, we explore the extent to which measures of media volume in newspapers, on television, and in social media correlate with surveillance knowledge over the course of the primary season. We predict that higher volumes of attention to a political event via any media source should positively relate to knowledge about that event.

Hypothesis 6: The degree to which a political event *is covered in newspapers* will be associated with young citizens' knowledge about facts relevant to that event.
Hypothesis 7: The degree to which a political event *is covered in television news* will be associated with young citizens' knowledge about facts relevant to that event.
Hypothesis 8: The degree to which a political event *is circulating in social media* will be associated with young citizens' knowledge about facts relevant to that event.

Method

Our study employs two sources of data: rolling cross-sectional survey data and aggregate media coverage data. Survey data were collected via an online questionnaire of U.S. young adults, from February 24, 2016 to March 17, 2016. We used a rolling cross-section design (Johnston & Brady, 2002) to survey a unique sample of 50 young adults per day, aged 18 to 35 years, over a 23-day fielding period. The research company Qualtrics was used to obtain a sample of participants stratified by gender, race, education, and income to match U.S. census data for this young adult population. Periodic attention checks were employed to ensure a high data quality. Respondents who failed the attention checks were excluded from the study and did not count toward the daily quota of 50 young adults. The final sample consists of 1,151 young adults.[1]

The strength of a rolling cross-section design is the ability to explore the dynamics of campaign information (Johnston & Brady, 2002). We capitalize on this strength by (a) measuring political learning as it relates to the unfolding of the U.S. primary election and other political events and (b) by accounting for the ebb and flow of opportunity to learn during a campaign environment.

Measuring Political Learning

Our measure of surveillance knowledge was extremely dynamic. Three categories of surveillance facts—nonprimary political facts, Democratic primary facts, and Republican primary facts—were measured by one question each. The questions were changed every 6 days during the survey period to reflect the most current political and primary happenings. Over the 23-day fielding period, this resulted in four sets of surveillance questions (Set 1: Days 1-6, $n = 300$; Set 2: Days 7-12, $n = 301$; Set 3: Days 13-18, $n = 301$; Set 4: Days 19-23, $n = 249$). Thus, each participant saw one set of three knowledge questions corresponding to when they took the survey.

The first type of surveillance knowledge measured in every set was knowledge about *nonprimary current events* involving public officials, government agencies, or political issues. No matter which day respondents completed the survey, they answered *one* nonprimary current events question. Respondents were either asked about Apple's refusal to provide the FBI with the ability to access the San Bernardino shooter's iPhone (Set 1); *or* President Obama's plan to close the Guantanamo Bay military prison (Set 2); *or* the NASA space landing (Set 3); *or* an incident involving West Virginia lawmakers and the legalization of unpasteurized milk (Set 4). A correct answer was coded 1, while incorrect answers were coded 0 (see Table 1 for descriptive information for all knowledge items). Because the questions were designed to tap a common type of surveillance knowledge, scores from the respective questions are collapsed across the sets as an indicator of current events knowledge among our young adult sample ($M = 0.67$, $SD = 0.46$). As will be discussed in more detail below, we account for potential differences in question difficulty across the sets in our modeling.

The second type of surveillance knowledge was *Democratic primary* knowledge. No matter which day respondents completed the survey, they answered *one* question about the Democratic primary. Respondents were asked either about Hillary Clinton's victory in Nevada (Set 1); *or* African American voters in the South Carolina primary (Set 2); *or* the results of Super Tuesday (Set 3); *or* Bernie Sanders' victory in Michigan (Set 4). Regardless of the particular question respondents answered, scores are collapsed across the sets as a measure of Democratic primary knowledge ($M = 0.49$, $SD = 0.5$).

Similarly, for our third measure, *Republican primary* knowledge, respondents were asked either about Jeb Bush dropping out of the race (Set 1); *or* the resignation of Ted Cruz's communication director (Set 2); *or* Ben Carson dropping out of the race (Set 3); *or* reaction to Donald Trump's border wall proposal (Set 4). Scores were collapsed across the sets as a measure of Republican primary knowledge ($M = 0.61$, $SD = 0.48$).

Predictors of Political Knowledge

Media Exposure. Respondents were asked how often in the past week, on a scale from *never* (1) to *very often* (5), they consumed various types of media on any device. A measure of *general network news use* was constructed by averaging how often respondents consumed national network news (e.g., *ABC, CBS, NBC*) and news from local affiliates ($M = 2.61$, $SD = 1.21$, $r = .68$). A measure of *conservative media use* was constructed by averaging how often respondents consumed *Fox News*, conservative talk radio (e.g., Rush Limbaugh), and conservative political blogs (e.g., Instapundit, Breitbart; $M = 1.95$, $SD = 1.11$, $\alpha = .87$). A measure of *liberal media use* was constructed by averaging how often respondents consumed *MSNBC, NPR*, and liberal political blogs (e.g., Daily Kos, Talking Points Memo; $M = 1.93$, $SD = 1.07$, $\alpha = .86$). A measure of *political entertainment use* was constructed by averaging how often respondents consumed entertainment news programs (e.g., E! News, Entertainment Tonight), daytime talk shows (e.g., Ellen, The View), and late-night talk shows (e.g., Jimmy Fallon, Jimmy Kimmel; $M = 2.2$, $SD = 1.12$, $\alpha = .85$).

Table 1. Descriptive Statistics for Knowledge Questions and Media Volume.

	Set	Percent correct	Media volume		
			NP stories	TV stories	FB shares
Democratic primary knowledge					
Clinton Nevada win	1	59	207	156	149,303
Support for Clinton in SC	2	53	159	105	5,300
Super Tuesday results	3	31	223	65	3,723
Sanders Michigan win	4	54	254	161	246,899
Republican primary knowledge					
Bush drops out	1	74	282	137	100,274
Cruz campaign controversy	2	28	57	61	9,542
Carson drops out	3	63	60	43	15,554
Mexico president and Trump	4	84	193	116	36,986
Nonprimary knowledge					
Apple and the FBI	1	76	166	69	231,534
Closing of Guantanamo Bay	2	78	101	52	97,272
NASA space record	3	56	20	39	179,263
West Virginia lawmakers	4	58	5	1	52,125

Note. NP = newspaper; FB = Facebook. NP and TV counts obtained from LexisNexis; Facebook shares obtained from NewsWhip. Counts reflect the number of stories published (or shared) during a 3-day period immediately following the event. The same event keywords were used in LexisNexis and NewsWhip.

Also included were two measures of exposure to news sources that successfully target a millennial audience. According to comScore web tracking desktop data from January 2016 (i.e., a month before our data collection), the digital-native media sites with the largest audience of 18 to 34 years olds were BuzzFeed (6.64 million unique visitors aged 18 to 34 years) and *Huffington Post* (6.33 million). We asked respondents to indicate—yes or no—whether they consumed any content in the past week about the 2016 election from BuzzFeed and *Huffington Post* (BuzzFeed exposure: 50.4%; *Huffington Post* exposure: 54.3%).

Talk and Social Media Exposure. We measured how often, from *never* (1) to *very often* (5), our respondents talked about news and current events or encountered news via social media. Regarding the former, this included a single-item indicator asking respondents how frequently over the past week they talked about news and current events with *family and friends* ($M = 3.11$, $SD = 1.21$). For the latter, we asked respondents to indicate how often in the past week they consumed news on *Facebook* ($M = 2.88$, $SD = 1.32$) and *Twitter* ($M = 2.13$, $SD = 1.31$).

Demographic and Motivational Factors. Respondents indicated their age ($M = 27.23$, $SD = 5.17$), gender identification (52% female), and race identification (64% White). A

measure of education was obtained by having respondents indicate their highest level of education, from *high school or less* (1) to *masters and above*, (4) ($M = 1.89$, $SD = 0.77$). We measured political party identification on a 7-point scale ranging from *strong Democrat* (1) to *strong Republican* (7) ($M = 3.56$, $SD = 1.66$). A measure of overall political interest was computed by averaging how interested respondents were in three topic areas: politics and national government, political campaigns and issues, and news and current events ($M = 3.3$, $SD = 1.04$, $\alpha = .9$).

Volume of Media Coverage

We supplement our individual-level survey measures with aggregate measures of media coverage related to our knowledge items. Each knowledge item asked about a specific political event (e.g., a Bernie Sanders victory). We developed a set of keywords corresponding to each political event and used the databases of LexisNexis and NewsWhip (a company that tracks social media engagements on stories posted to news media websites) to determine the volume of media coverage in the 3-day period after the event occurred. We looked at the volume of coverage in U.S. major newspapers (LexisNexis), broadcast and cable news channels (LexisNexis), and in news stories shared into Facebook (NewsWhip; see Table 1).[2] While counts generated by this procedure are not generalizable to all news media or all social media sites, the measures do serve as a good proxy for volume of media coverage related to each knowledge item (Jerit et al., 2006). On average, 144 U.S. major newspaper stories were written about a given knowledge item event, 84 story segments aired on network and cable news, and stories about the knowledge item were shared into Facebook 93,981 times. Our measure of newspaper coverage volume was highly correlated with television ($r = .85$, $p \leq 001$); however, neither traditional news measures was correlated with Facebook shares (NP and FB $r = .24$, *ns*; TV and FB shares $r = .33$, *ns*).[3]

Results

Predictors of Knowledge

Following past studies, we used a series of logistic regression models to predict a correct score for each of the three measures of surveillance knowledge, while controlling for demographic factors related to levels of political knowledge (Delli Carpini & Keeter, 1996; Prior, 2007). Each regression model contained the same demographic and motivational measures, and mainstream news media, talk, and social media news exposure measures. Also included were dummy variables for knowledge set (Set 4 as the reference group). This allows us to account for the possibility that questions may differ in their overall level of difficulty.

We begin by analyzing the two models predicting knowledge about the primaries. The models predicting partisan knowledge show a number of similarities. In both models presented in Table 2, the only significant ability or motivational factor is political interest, which acts as a positive predictor of both Democrat (B = 0.226, $p \leq .01$) and

Table 2. Logistic Regression Models Predicting Surveillance Knowledge.

	Democrat primary knowledge, B (*SE*)	Republican primary knowledge, B (*SE*)	Nonprimary knowledge, B (*SE*)
Age	−0.004 (0.014)	−0.003 (0.016)	−0.02 (0.016)
Gender (female)	0.034 (0.15)	−0.145 (0.164)	−0.067 (0.163)
Education	0.093 (0.097)	−0.002 (0.104)	0.248* (0.105)
Race (White)	−0.155 (0.153)	0.032 (0.167)	0.272† (0.163)
Party ID (Republican)	−0.054 (0.044)	0.013 (0.047)	0.051 (0.047)
Political interest	0.226** (0.088)	0.279** (0.096)	0.413*** (0.096)
General network news	0.111 (0.085)	−0.022 (0.094)	0.092 (0.094)
Conservative news	−0.267* (0.128)	−0.525*** (0.143)	−0.27† (0.14)
Liberal news	0.092 (0.132)	0.116 (0.146)	−0.217 (0.143)
Political entertainment news	−0.316** (0.106)	−0.09 (0.115)	−0.124 (0.117)
BuzzFeed	0.309* (0.151)	0.282† (0.164)	−0.098 (0.162)
Huffington Post	0.486*** (0.149)	0.248 (0.161)	0.327* (0.159)
Twitter news	0.097 (0.07)	0.077 (0.078)	0.068 (0.076)
Facebook news	−0.069 (0.065)	−0.089 (0.072)	−0.079 (0.072)
Talk with family/friends	0.183* (0.072)	0.166* (0.078)	0.07 (0.078)
Set 1 dummy	0.097 (0.201)	−0.714** (0.24)	0.888*** (0.219)
Set 2 dummy	−0.091 (0.201)	−2.53*** (0.243)	1.01*** (0.223)
Set 3 dummy	−1.123*** (0.208)	−1.16*** (0.237)	−0.21 (0.203)
Nagelkerke R^2 (%)	15.3***	28***	17.4***
N = 936			

Note. Logistic regression betas are reported, standard errors in parenthesis.
†$p \leq .1$. *$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

Republican primary knowledge (B = 0.279, $p \leq .01$); we do not find that education or party identification plays a role in predicting primary knowledge, thus offering only modest support for Hypothesis 1. Beyond *who* is more knowledgeable, the results point to several pathways for *how* knowledge about primaries is acquired. Consistent across both models is the positive relationship between informal talk with family and friends and primary knowledge (B = 0.183, $p \leq .05$; B = 0.166, $p \leq .05$), supporting Hypothesis 2. While both models show a nonsignificant role for Facebook and Twitter news exposure, there are key differences among the other media items. In the Democrat primary model, exposure to BuzzFeed (B = 0.309, $p \leq .05$) and *Huffington Post* (B = 0.486, $p \leq .001$) has a positive relationship to knowledge, while conservative news use (B = −0.267, $p \leq .05$) and political entertainment (B = −0.316, $p \leq .01$) are negatively related to knowledge. In the Republican primary model, media use plays a weak role in knowledge acquisition. BuzzFeed is only a marginally positive predictor (B = 0.282, $p \leq .1$). And contrary to our expectations, conservative news use is negatively related to knowledge about the Republican primary (B = −0.525, $p \leq .001$). Thus, we find no support for Hypothesis 3 regarding mainstream news use, but strong support for Hypothesis 4 in terms of digital-only news. Our expectation that consumers of partisan media would know more about their party's primary (Hypothesis 5) was unsupported.

When turning to nonprimary knowledge, we find a different pattern of results. Political interest (B = 0.413, $p \leq .001$) and education (B = 0.248, $p \leq .05$) play a positive role in knowledge about nonprimary current events, lending relatively stronger support to Hypothesis 1. Exposure to political content via the *Huffington Post* plays a positive role (B = 0.327, $p \leq .05$), while conservative news use continues to play a marginally negative role (B = −0.27, $p \leq .1$). BuzzFeed news use and talk with family and friends are no longer significant predictors.

These findings echo past research that politically interested individuals are more knowledgeable, and point to the dynamic relationship between news exposure and knowledge in the modern media environment. Across all three models, the only self-report media exposure variables with positive relationships to knowledge were exposure to BuzzFeed and the *Huffington Post*—two sources that were identified by behavioral data (comScore) as top online destinations for young adults in 2016. We did not find any evidence that mainstream news use or liberal news use play a role in predicting knowledge, at least when measured in terms of self-reported exposure, nor do we see any indication that encountering news via Facebook or Twitter plays a role in this process.

Lastly, above and beyond the other variables in the Democrat primary model, it appears that the question in Set 3 (details about Super Tuesday results) was more difficult than the other Democrat primary questions: Only 31% of respondents correctly answered this question. Similarly, in the Republican primary model, the Set 4 question about Donald Trump and building a wall was easier compared with the others: 83% of respondents correctly answered the question. Finally, in the nonprimary model, the questions in Sets 1 and 2 (e.g., Apple and the FBI, the closing of Guantanamo Bay, respectively) were easier than the other sets, with 76% and 78% correctly answering these questions.

While accounting for set differences in our models provides for a rigorous test of knowledge prediction using our individual-level survey measures, it also raises the question of *why* some of our surveillance questions were easier or harder than others. Based on previous research (Barabas et al., 2014; Iyengar et al., 2009; Jerit et al., 2006), certain questions could have been easier because they received a high volume of media coverage, while other questions were hard to correctly answer because they received a low volume of media coverage.

Knowledge and Media Volume

Our next analysis considers the role of the larger media environment in explaining levels of knowledge. In this analysis, we make no distinction between type of surveillance knowledge, as we expect the same volume explanation to hold for primary and nonprimary knowledge.

The simplest way to test this explanation is by examining the correlation between the amount of media coverage a question topic received and the proportion of people who answered the question correctly. We conduct this analysis for each of our media volume measures—newspaper, television, and rate of Facebook shares—using a log

transformed count. We find that volume of newspaper coverage was not related to knowledge percent correct (r = .14, *ns*). The same is true for volume of television coverage (r = .15, *ns*). Thus, Hypotheses 6 and 7 were not supported. We do, however, observe a strong, significant correlation between how often media stories about a political event were shared into Facebook and percent correct among our sample of young adults (r = .57, $p \leq .05$). This relationship supports Hypothesis 8. Knowledge questions that referred to political events that had received high Facebook share volume were easier to correctly answer.[4]

Supplemental Analysis

Our findings indicate that certain knowledge items were harder than others, and certain items received less media attention than others. We were curious what impact, if any, these contextual factors had on the individual-level predictors of knowledge. To explore this, we conducted a supplemental analysis, disaggregating the overall regression models presented in Table 2. Specifically we explored whether "easy" questions (which tended to have a high volume of Facebook shares) exhibited a different pattern of individual-level predictors, compared with questions that were more difficult (and tended to have low Facebook shares).

We ran two logistic regression models (Table 3) predicting a correct answer to the hardest Democrat primary question (from Set 3), and the easiest (from Set 1). Results suggest a different set of predictors are at play for easy versus hard questions. A correct response to the more difficult question appears to be driven by motivational variables: higher levels of political interest (B = 0.502, $p \leq .05$) and with Democratic party identification (B = −0.202, $p \leq .05$). We also know that this question was low in terms of volume of media attention. It appears that when media attention is low, motivation matters more for knowledge acquisition. We can contrast this with the regression model predicting a correct response to the easier question, which also received a higher volume of media attention. Instead of political interest and partisanship playing a motivating role, we see that education plays a significant role in predicting a correct response (B = 0.564, $p \leq .01$). This finding echoes previous research showing that the relationship between knowledge and education is strengthened when events are highly covered by the mass media (Jerit et al., 2006; Kwak, 1999). We also see that media exposure at the individual level, through *Huffington Post* exposure (B = 0.755, $p \leq .05$), is strongly related to correctly answering this question. *Huffington Post* users are two times more likely than nonusers to do so (odds ratio = 2.127).

Moving to the Republican primary questions (Table 4), a somewhat different story emerges. For the most difficult question (from Set 2), the only positive predictor is talk with family and friends (B = 0.364, $p \leq .05$). It appears that talk serves as an important conduit of knowledge, particularly when an event has a low volume of media coverage. This is not the case for the easiest Republican primary question (from Set 4). Here we see the influence of individual-level media exposure, and specifically BuzzFeed exposure, in predicting a correct answer (B = 1.424, $p \leq .01$). BuzzFeed users are four times more likely to get this question correct (odds ratio = 4.153).

Table 3. Predicting a Correct Answer to Specific Democrat Primary Questions.

	Super Tuesday results (hard question), B (*SE*)	Clinton Nevada win (easy question), B (*SE*)
Age	0.009 (0.032)	−0.035 (0.03)
Gender (female)	0.872* (0.345)	−0.371 (0.303)
Education	−0.091 (0.208)	0.564** (0.203)
Race (White)	0.107 (0.343)	−0.302 (0.326)
Party ID (Republican)	−0.202* (0.103)	−0.057 (0.086)
Political interest	0.502* (0.205)	0.076 (0.162)
General network news	0.102 (0.183)	0.119 (0.172)
Conservative news	−0.298 (0.279)	−0.357 (0.282)
Liberal news	−0.185 (0.279)	0.074 (0.308)
Political entertainment news	−0.606* (0.25)	−0.437* (0.219)
BuzzFeed	−0.118 (0.332)	0.476 (0.305)
Huffington Post	−0.048 (0.315)	0.755* (0.3)
Twitter news	0.13 (0.139)	−0.029 (0.139)
Facebook news	0.061 (0.128)	−0.213 (0.135)
Talk with family/friends	−0.018 (0.163)	0.179 (0.136)
Nagelkerke R^2 (%)	18.6**	14.5*
	N = 245	*N* = 247

Note. SE = standard errors. Logistic regression betas are reported, standard errors in parenthesis.
†$p \leq .1$. *$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

Table 4. Predicting Correct Answer to Specific Republican Primary Questions.

	Cruz campaign controversy (hard question), B (*SE*)	Reaction to Trump Mexico wall (easy question), B (*SE*)
Age	0.027 (0.032)	0.008 (0.047)
Gender (female)	−0.358 (0.338)	−0.302 (0.451)
Education	0.055 (0.21)	−0.359 (0.311)
Race (White)	0.011 (0.327)	0.037 (0.442)
Party ID (Republican)	−0.071 (0.095)	0.052 (0.13)
Political interest	0.295 (0.208)	0.274 (0.275)
General network news	0.073 (0.182)	−0.424† (0.254)
Conservative news	−0.531* (0.267)	−0.826* (0.404)
Liberal news	0.038 (0.263)	0.287 (0.401)
Political entertainment news	−0.331 (0.214)	0.311 (0.324)
BuzzFeed	−0.121 (0.334)	1.424** (0.503)
Huffington Post	−0.099 (0.34)	0.356 (0.468)
Twitter news	0.154 (0.162)	−0.116 (0.227)
Facebook news	−0.128 (0.149)	−0.239 (0.226)
Talk with family/friends	0.364* (0.159)	0.377† (0.224)
Nagelkerke R^2 (%)	15.3*	25.7**
	N = 239	*N* = 205

Note. SE = standard errors. Logistic regression betas are reported, standard errors in parenthesis.
†$p \leq .1$. *$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

Discussion

This study sought to extend political knowledge research by exploring political learning during the 2016 U.S. primary elections. Our focus on young adults and the acquisition of recent surveillance knowledge necessitated a move beyond traditional measures and methods. In particular, we account for an expanded range of media measures—both at the individual and aggregate levels—that provide today's young adults with the opportunity to learn about current events. This includes new media options such as late-night talk shows, BuzzFeed, and Facebook, as well as more traditional news offerings. We also used a rolling cross-section survey method to ask participants about the most recent current events during the primary election campaign.

Our results both confirm past work and offer new insights into political learning among young adults. As in previous studies of knowledge, we did not detect strong effects of self-reported media use on political knowledge. The "usual suspects" of mainstream news media were unrelated to learning about breaking campaign news among this sample of young adults. Instead, we see a role for more niche forms of media consumption—and a role that is not always positive.

Our finding that conservative news media was negatively related to surveillance knowledge was in line with some previous research (Kull et al., 2003; PublicMind Poll, 2012), but we did not expect to find that use of conservative media is negatively related even to knowledge of news related to the Republican primary. This finding may reflect the complexity of a Republican primary with multiple candidates and a conservative media system that was divided over whom to support (Draper, 2016), as well as the relatively low-information density of the media formats (talk radio and cable news) that make up key elements of the conservative media system. There is also evidence that consumers of conservative media tend to be relatively more closed off in their information environments, either not consuming or deeply suspicious of more mainstream outlets, which may limit the reach of factual information (Faris et al., 2017).

In contrast, digital-only news served as a positive force in political knowledge acquisition. This finding reflects significant shifts with the news industry and the particular media habits of young adults. Jill Abramson, former *The New York Times* executive editor, recently described BuzzFeed as "building up more conventional news muscles" through its young adult audience (Nieman Reports, 2016). In a number of cases, exposure to BuzzFeed and *Huffington Post* was positively related to knowledge, even after we control for general self-reported exposure to news content on social media. Descriptively, rates of encountering political content from these sources were quite high. These digital-only news sources are attracting younger audiences through their unconventional voice, distribution through social media, and coverage of topics that matter to young people.

Our findings also show the social stream is an important carrier of political information. It is notable that newspaper and television coverage of current events topics during the primaries were correlated with each other—as we would expect from the literature on intermedia agenda setting (Sweetser, Golan, & Wanta, 2008)—but unrelated to the volume of news story shares into Facebook. This suggests that the social stream of

news about the primaries, as selected by individual social media users for sharing, was somewhat distinct from the agenda of the mainstream news media.

Moreover, this study provides perhaps the first evidence that this distinct social stream of news is uniquely impactful on political knowledge acquisition among young adults, at least in the primary context. Respondents were better able to answer knowledge questions about events that had been shared more widely into Facebook. In fact, the strength of the relationship we observed between knowledge and Facebook shares mirrors the levels that Jerit et al. (2006) found over a decade ago with traditional news media measures. Today's young adults are more likely than any other age cohort to report that social media are their most important source of political knowledge (Gottfried, Barthel, Shearer, & Mitchell, 2016). The findings of this study suggest that the shift toward reliance on social media for political information will bring with it a shift in the content of political knowledge among this population.

There are several limitations that should be considered alongside these findings. The first relates to the specific context of the 2016 primary election, which featured competitive elections within both the Democratic and Republican parties. Though primaries are clearly central to our political system and culture, they also have particular features not prominent in other circumstances. Second, a tradeoff of our rolling cross-section design is that knowledge questions were updated every 6 days. While this process enabled us to measure knowledge related to the most recent current events, it also requires comparing knowledge of facts that varied in coverage, difficulty, and respondents' ability to guess the answer—this is both an advantage and a disadvantage to our study. Lastly, our motivation measures (partisanship and interest) were explicitly political, and did not account for other motivations that might explain learning, such as media preferences or psychological needs (Eveland, 2001). Moreover, factors related to information processing—attention and elaboration—are not considered in our models, but likely played an important role. Future research should include these factors in conjunction with the contextual approach taken in this study.

The structures through which young Americans learn about political events are changing. Using both individual-level measures of media exposure and media volume analyses, we have demonstrated the importance of new players in the political information landscape—mainly, digital entrants such as *Huffington Post* and BuzzFeed—and the larger framework—social media, and especially Facebook—that carries much of that content. At the same time, evidence of powerful media effects is scarce, and the dominant predictor of political knowledge remains political interest, indicating a strong degree of continuity in what makes for an informed citizen—even if those interested citizens now find content in new places.

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Notes

1. On 11 days, the quota was not precisely attained; these days averaged ±3 respondents.
2. NewsWhip social tracking software is used by a number of major news organizations, and has also been used previously in scholarly research (Harlow, Salaverría, Kilgo, & García-Perdomo, 2017). We used keyword searches to query the NewsWhip database of media stories that had been shared from the websites of news media organizations into the Facebook platform.
3. This pattern still holds when using log tranformed counts. We also split television into "broadcast" and "cable" coverage. These measures were highly correlated (r = .78) and produced the same pattern of findings with knowledge. Therefore, we retain the single item measure of television coverage.
4. Descriptively, this is best illustrated with the two questions that yielded the lowest proportions of correct responses. The question about the details of Super Tuesday results (31%) and the Cruz campaign controversy (28%) produced the lowest and third lowest (respectively) rate of Facebook shares. At the other end of the spectrum, the question with one of the highest proportion of correct responses asked about Apple and the FBI (76%). This was also the second most highly shared story topic on Facebook among our knowledge topics. We also created a singular media volume measure that standardized and combined the newspaper, television, and Facebook measures. This single measure was not related to percent correct, signaling the unique contribution of Facebook shares as a media environment measure. We also pursued an alternative analytic strategy: A single multilevel model that included both the individual-level survey measures and media volume. A Glimmix procedure (SAS Institute, 2008) for random effects (i.e., treating each of the knowledge types as a repeated measure for slope testing), revealed the same pattern of results—that is, conservative media use is negatively related to knowledge, digital-native media is the only positive media contribution, and only the Facebook volume measure is a significant predictor of knowledge. Given the similarity in these results, we elected to present the separate logistic regression models for the three knowledge types. This allows us to best illustrate when our findings are specific to a certain type of knowledge, and when they are consistent across the knowledge models.

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