

Differentiated Information Flows: Social Media Curation Practices in the 2016 U.S. Presidential Elections

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Digital media enable political actors to engage in strategic information curation. This study analyzes the linking practices of U.S. presidential candidates running in the 2016 election. Using exploratory data analysis and confirmatory tests of hyperlinked domains, we find that presidential candidates curate information flows that are distinct by party and even within party. Though candidates in both parties share a common set of links primarily via mainstream media outlets, Republican candidates also link to a set of news and information sites that their Democratic counterparts do not link to, and vice versa. Republican candidates have distinct hyperlinking practices during the surfacing and primary stages of the election cycle relative to other Republican candidates, suggesting that just as candidates differentiate themselves in terms of issue ownership, they also do so in terms of information ownership. Finally, the candidates use Twitter and Facebook differently in terms of the frequency of links and the diversity of those links.

Keywords: homophily, information publics, hyperlinking, political campaigns, political parties, Twitter, Facebook

Information communication technologies render information flows more transparent and explicit through the structures of the technology. Specifically, hyperlinking embeds relationships in software code. Foot and Schneider (2006) were early observers of how hyperlinking was used during U.S. political campaigning online as a way to enable new information flows to occur among actors, such as between candidates and allied

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interest groups to which they might link on their websites. In the 2016 presidential primary campaigns in the United States, the 17 Republican and five Democratic candidates promoted information flows via their tweets and Facebook posts on their free campaign accounts and pages. This article investigates those linking practices to understand the strategic information curation practices by campaigns.²

Our work builds on prior scholarship on hyperlinking practices in the political sphere. Our study updates the research by Foot and Schneider (2006) and their analysis of what they call *Web campaigning*. Their research suggests that campaigns of the early 2000s—when campaigns primarily used websites for online campaigning—engaged in strategic hyperlinking to third-party websites. Our work further extends the scholarship about the linking practices on blogs, which finds that political actors link primarily to others who share their ideological dispositions: Conservatives primarily link to conservatives, and liberals primarily to liberals (see for example, Hargittai, Gallo, & Kane, 2008). Similar results have been obtained by examining who mentions whom via the @mention tag on Twitter (e.g., Hemsley, Semaan, Tanupabrunsun, & Stromer-Galley, 2018).

This study brings together several related theories to examine how elites engage in what Thorson and Wells (2015) call *strategic curation*—the creation, selection, filtration, and annotation of information—which campaigns do as part of the communication work of political campaigning. The theories include homophily (the tendency for individuals to align with like-others); issue ownership (candidates adopt specific issues to differentiate themselves from their opponents); and strategic platform differentiation (campaigns use different social media platforms in distinct ways for strategic purposes). These three theories may help explain how campaigns use digital media to cultivate distinct information flows.

In this study, we investigate trace evidence of the curation logics that candidates in the 2016 U.S. presidential campaigns used when providing links to third-party websites. We ask whether campaigns' linking practices can reinforce differences among themselves—either across different parties or even within the same party; we also ask if there are differences in how candidates use Twitter and Facebook. Our results suggest that candidates curate distinct information flows, with domains most often receiving links from members of one party, but not the other. Additionally, we find that individual Republican candidates during the early campaign stages tend to link most often to sites that other Republicans do not link to. Finally, we find substantial differences in linking practices on Facebook versus Twitter.

Literature Review

Hyperlinking

Since the 1990s, scholars have been interested in how hyperlinking makes connections between information sources or actors in the digital communication environment of the Internet. Hyperlinks are technological features that enable information flows. Hyperlinks not only make linkages; they also serve as rhetorical markers that do identity work through association with ideas and actors in the networked sphere they construct.

² Throughout, we use the terms *candidate* and *campaign* interchangeably.

Researchers have examined the practices of hyperlinking in the context of politics. In a foundational study, Foot and Schneider (2006) examine the hyperlinking practices on websites of U.S. political campaigns in the early 2000s. They argue that hyperlinks make both transversal and cognitive “bridges” among actors. A transversal bridge is the literal digital connection that enables a reader to jump to the new page that the text connects to, whether that connection is an elaboration, a citation, or a critique. A cognitive bridge is the symbolic connection that a hyperlink communicates among actors. Political campaigns create literal and symbolic bridges when they hyperlink to an ideologically similar organization. For example, a Democratic candidate who has received an endorsement from a labor union might link to that labor union, thereby creating the cognitive association of ideological affiliation.

Most campaigns engage in hyperlinking practices on their websites and in their social media. In their analysis of campaign websites from the congressional campaigns of 2002, Foot and Schneider (2006) found that 75% linked to sites for political parties, the news media, civic or advocacy groups, and governmental organizations. Similarly, the 2004 presidential candidate sites of Kerry and Bush provided links to external sites, such as the news media (29%), civic or advocacy groups (69%), and national party websites (45%; A. P. Williams, Trammell, Postelnicu, Landreville, & Martin, 2006).

The cognitive and transversal bridges that campaigns create through their hyperlinking practices control attention. Thus, when a producer links to a third site, the producer communicates to its audience something meaningful about that third site and draws attention to it. In this way, campaigns and their hyperlinking practices act as information curators (Thorson & Wells, 2015). They direct their followers to certain information, acting as what some scholars have called *secondary gatekeepers* (Singer, 2014; Thorson & Wells, 2015).

Political candidates have long performed this role of information curation, but social media provide candidates with more opportunities to play this role directly, bypassing gatekeepers in the traditional media (Stromer-Galley, 2000). Thus, this study seeks to understand how political candidates, in the heat of political campaigns, construct an information environment for their supporters and signal their relationships with different information sources or partisan perspectives, directing their followers to certain websites (rather than other websites) by including hyperlinks in their social media posts.

Homophily

When campaigns hyperlink to third-party sites, they often do so to sites with strategic functions that align with the campaign (Foot & Schneider, 2006). This practice can be explained by the theory of homophily, which is the observation that people tend to associate with those who are like themselves rather than those who are dissimilar (McPherson, Smith-Lovin, & Cook, 2001). Homophily is often studied in terms of social networks. For example, researchers have looked extensively at political weblogs and hyperlinking practices, finding consistent evidence for homophily (Adamic & Glance, 2005; Hargittai et al., 2008; Lauw, Shafer, Agrawal, & Ntoulas, 2010; Nahon & Hemsley, 2014; Perlmutter, 2008). These studies typically analyze the links provided in blog posts. More recent work has examined social media sites, especially Twitter. Because of Twitter’s character limits (140, later 280), hyperlinking to a website enables the content

producer to offload some of the evidence or related information to a third-party site or to drive traffic to where the argument or information is elaborated.

We expect that there is a small group of mainstream news sites that most or all candidates link to (e.g., CNN and USA Today), given that the traditional news sites are still vitally important (Chadwick, 2017), but that most Republican candidates link to one cluster of news and information websites while most Democratic candidates link to a different cluster of websites. Thus, we test the following hypothesis:

H1: Republican candidates primarily link to one set of third-party media and information sources that differs from the sources to which Democratic candidates link.

Rhetorical Differentiation

Political campaigns, especially during the early stages of the campaign, must work to differentiate themselves from their opponents. A long-standing body of scholarship looks at how candidates differentiate themselves based on issues. Petrocik (1996) offered a theory of issue ownership to explain why political campaigns matter: Candidates articulate problems (used synonymously with *issues*) as a way to cultivate a base of supporters distinct from opponents. The public, he argued, is more compelled by issues than by policies. Given this, candidates typically campaign on a small set of issues that align voters who care about those problems into a base of support. Petrocik, Benoit, and Hansen (2003) further tested this theory by examining speeches and ads by presidential candidates between 1952 and 2000 and found that Republican campaigns owned the issues of defense policy; crime, drugs, and morality; and spending, taxes, and the deficit. Democratic campaigns owned the issue of social welfare.

Research further suggests that candidates, not just parties, differentiate themselves through issue ownership and through their rhetoric to construct their image (Jamieson, 1992; Johnston & Kaid, 2002). A now classic study by Johnson and Kaid (2002) analyzed five decades of presidential campaign television advertisements and found that 35% of their sample focused on candidates' qualities to lead and other personality characteristics, while 65% focused on candidates' policy and issue positions. Arbour's (2013) analysis of campaign communication further suggested that candidates build a reputation around a specific issue and then campaign on that issue consistently during the primaries.

The 2016 surfacing and primary stages of the campaign saw a large number of candidates running for the Republican nomination, which required campaigns to find ways to distinguish themselves from their opponents. Voters typically have less knowledge of the candidates in the primary phase. This leaves candidates with a strategic opening: If they can be the first to energize a base, they may gain enough momentum to drive some of their opponents out of the primary race—a tendency that might be particularly prevalent relatively early in competitive races with multiple candidates in which no candidate has established a strong plurality (much less a majority) of supporters. Journalists and political campaign managers themselves discussed their different "lanes" and how they tried to secure specific constituencies within the electorate in ways that would differentiate themselves from other candidates ("Campaign for President," 2016).

Yet while studies have examined the ways that candidates carve out their issues and identities in contrast with opponents (Arbour, 2013), little research has examined the ways that campaigns use and connect to news and information sources as another signal of differentiation. In the 2016 campaign season, there were many competitors for the Republican Party nomination (17), but only a few for the Democratic Party nomination (five). Further, the Democratic Party primary contest saw only two competitive candidates (Clinton and Sanders). We use the crowded Republican primaries with 17 candidates to ask:

RQ1: Do the Republican candidates attempt to establish distinct issue and information ownership spaces by linking to disparate sets of news and information websites?

Strategic Platform Differentiation

Much of the research on political campaigning on social media focuses on a single platform, such as Twitter (Bruns & Highfield, 2013; Conway, Kenski, & Wang, 2013; Evans & Clark, 2016; Evans, Cordova, & Sipole, 2014; Hemsley et al., 2018; Jungherr, Schoen, & Jurgens, 2015; Stromer-Galley, Zhang, Hemsley, & Tanupabrunsun, 2018), Instagram (Towner & Munoz, 2017), or Facebook (Bene, 2017; Borah, 2016; Gerodimos & Justinussen, 2015; Larsson, 2016; C. B. Williams & Gulati, 2013). Yet campaigns use multiple social media platforms to strategically communicate with journalists, supporters, and their opponents (Stromer-Galley, 2019). Stromer-Galley (2019) and Kreiss (2012) find through interviews and analyses of campaign strategy that campaigns strategically use different social media in distinct ways, in part because the audiences for each platform are different. Bossetta (2018) analyzed Twitter, Instagram, Facebook and Snapchat during the 2016 presidential campaigns and suggests that the digital architecture of a given platform shapes the strategic communication by campaigns. For example, Bossetta notes that Snapchat's filters are silly and text based as compared with Instagram's, which are more artistic. Campaigns thus create a different narrative with Snapchat than they do with Instagram, given these differences in image style. Additionally, campaigns may use platforms differently because of different cultures on each platform. For example, campaigns post more frequently on Twitter than on Facebook (Rossini et al., 2018). Kreiss, Lawrence, and McGregor (2018) urge political communication scholarship to expand research to multiple platforms, given that campaign staff suggest that they see the platforms as offering different strategic benefits in terms of audience, genres, affordances, and timing. Their interviews with campaigns suggest that Facebook and Twitter are two key social media platforms that campaigns use, but for different purposes. For example, Twitter's journalist-heavy audience and real-time news feed is useful for attempting to set the news media's agenda, while Facebook's photo-driven, supporter-heavy audience is useful for rallying supporters.

Thus, we ask:

RQ2: Are there differences in the linking practices to news and information sites on Facebook versus Twitter?

Data

Our data were originally collected via the Twitter and Facebook application programming interfaces (API), which allow us to programmatically collect data from these platforms. We used two data sets for this analysis. Both contain messages from Republican and Democratic Party candidates from the date they

launched their candidacy until their campaign ended or there was an election.³ These data sets are described in Table 1. Our analysis focuses on messages that contained at least one URL. We computationally identified URLs in Facebook posts by searching the text of the post using a regular expression pattern built to identify URLs.⁴ The second data set contains all tweets that candidates sent out via their official Twitter accounts, excluding retweets. URLs in tweets were identified through metadata returned from Twitter's API.

Table 1. A Description of the Contents of the Two Data Sets.

	Total messages	Messages with URLs	Total URLs	URLs to news and information domains
Facebook	26,825	6,451	6,762	1,201
Twitter	69,621	23,734	25,189	4,286

A total of 34% of tweets from candidates contained URLs, versus only 24% of Facebook posts. Table 2 shows the breakdown of the number of messages with hyperlinks on each platform from each party. Given that there were 17 Republican candidates versus five Democratic candidates, the higher volume from the GOP is not surprising; the number of links per candidate was not substantially different.

Table 2. The Number of Messages With URLs From Each Party on Each Platform.

	Facebook	Twitter
Democrats	1,277	6,339
Republicans	5,174	17,395

After identifying URLs in all messages, we isolated the domain in each URL. A domain name identifies the unique address of (among other things) a website on the Internet. Domain names contain multiple hierarchical levels ("Domain name," 2020). Our analysis focuses on the organization level of domains (e.g., "nytimes" in "nytimes.com"), found in the middle of domain names, which allows us to examine which websites (e.g., nytimes.com), rather than individual pages (e.g., nytimes.com/section/travel), candidates link to. Thus, we combined domains that were functionally the same. For example, we treated both blogs.cnn.com and money.cnn.com as cnn.com.

Because the focus of this analysis is on media and information sites, we excluded domains that point to content hosting platforms, such as Facebook and Imgur. We removed domains of the candidates' websites as well, because all candidates tended to link to their own sites but not other candidates'. It is important to note that links to the campaign website from Facebook posts and tweets constituted the largest

³ Republican candidates were Jeb Bush, Ben Carson, Chris Christie, Ted Cruz, Carly Fiorina, Jim Gilmore, Lindsey Graham, Mike Huckabee, Bobby Jindal, John Kasich, George Pataki, Rand Paul, Rick Perry, Marco Rubio, Rick Santorum, Donald Trump, and Scott Walker. Democratic candidates were Lincoln Chafee, Hillary Clinton, Martin O'Malley, Bernie Sanders, and Jim Webb.

⁴ Our pattern is available on request, which is a modified version of the pattern at <https://gist.github.com/gruber/8891611>.

single domain represented in our data set. With only a few exceptions, the candidates heavily promoted their own website domain over all other domains to which they may have linked.⁵

We also followed shortened links (for example, bit.ly) to their final destination and applied the rules as stated earlier. If shortened links could not be expanded, the links were removed from analysis. We also removed from this analysis links to shopping sites, such as Amazon, and to search engines or survey sites, such as SurveyMonkey. We kept in this analysis links to political partisan activist sites as well as government and nonprofit sites.

After cleaning the domain data, we aggregated them into a four-column analysis data set for both Facebook and Twitter; the columns are *candidate*, *domain*, *link count*, and *party*. The unit of analysis for our first research question was the candidate-domain link. We also created a second analysis data set for the hypothesis test where the unit of analysis was the party-domain link, and so we aggregated the count of links to domains to the party level.

Methods

In this study, we first tested the hypothesis that Republicans link primarily to one common set of websites and Democrats link primarily to a different common set. Then, we asked whether campaigns used Facebook differently than they used Twitter. To answer this, we considered messages sent by campaigns during any period of the campaign. We also asked whether the Republicans had distinct linking practices relative to each other. To answer this question, we only considered messages sent during the surfacing and primaries stages of the campaign, when multiple Republicans were actively campaigning.

We conducted a two-phase analysis recommended by Tukey (1977), first using exploratory data analysis (EDA), and then, where appropriate, using statistics to confirm our observations. For EDA, we used descriptive statistics, tables, aggregation, and visualization techniques to make sense of our data. We used the analytic tool of visual artifacts generated using social network analysis techniques to plot networks created by the links between candidates and website domains (Wasserman & Faust, 1994). We constructed two nondirectional networks. In the first, we examined the links between parties and domains; in the second, we studied the links between the leading Republican candidates and the sites they referenced. We then analyzed these networks for patterns. Note that because of the large number of links and domains, the version of the within-party plot included here (Figure 2) is a smaller version. An online version is more legible.⁶

⁵ On Facebook: With the exceptions of Chris Christie, Scott Walker, Jim Webb, George Pataki, and Jim Gilmore, all the candidates linked to their own website domains, and it comprised the largest share of links. Bernie Sanders was the most extreme, with all but three links pointing to his campaign website. Although her campaign was shorter than many of the candidates, Fiorina posted more than 180 links on her Facebook page to her website, which was the most out-links, with the exception of Clinton (who posted 663). Most of the primary candidates posted fewer than 100 links to their Facebook accounts. On Twitter, Jim Webb, Chris Christie, Scott Walker, George Pataki, and Jim Gilmore were the only candidates who did not link to their own website domain. Rand Paul beat the pack by posting 636 times.

⁶ https://github.com/sjacks26/hyperlink-homophily/blob/master/WithinParty_AnalyticArtifact_V2.pdf

Unlike prior work on hyperlinking (e.g., Adamic & Glance, 2005; Hargittai et al., 2008; Nahon & Hemsley, 2014), our analysis does not consider the ideological stance of the domain; rather, we looked for patterns in the hyperlinks between candidates and websites while remaining agnostic about the nature of those domains and about the content of websites. Ideological classification was relatively straightforward in few cases. For example, FoxNews.com is a right-leaning site, while MSNBC is a left-leaning site; other sites, such as WashingtonPost.com, are considered neutral sites by some and left-leaning sites by others. Given that there is not an agreed-on ideological scale for news domains, we chose not to engage in such fraught classification ourselves. Also, unlike other studies that systematically classify the URLs into categories of types of links (see, for example, Moe & Larsson, 2013), we provide instead a qualitative assessment of the types of links through a close examination of the domains. Although some sites can easily be grouped together (for example, *The New York Times* and the *Washington Post*), the majority of the sites cannot be as easily categorized. This may be because of ambiguous ideological stance, blurred lines between editorials and newsroom pieces, or even specific functions (e.g., engaging in identity politics versus advocating for a policy position) that complicate an accurate grouping of sites. Moreover, for our research questions, such classifications in terms of ideology or type were not needed.

Results

Across Party

We first tested the hypothesis that Democratic candidates linked to different sites than Republican candidates did, examining linking practices on Facebook and on Twitter separately.

Facebook

Our analysis revealed three categories of websites: those that only Democratic candidates linked to, those that only Republican candidates linked to, and those that both linked to. Following the hyperlink inclusion and cleaning process described earlier, our data set contains 339 unique domains that candidates linked to on Facebook during the 2016 campaign race. Republicans in general posted links to many more domains than did Democrats: A total of 281 (83%) sites received links from only Republicans, 35 (10%) sites received links from only Democrats, and 23 (7%) sites received links from candidates from both parties.

There are noteworthy differences in the domains that received links from each party. As shown in Table 3, only Republicans linked to FoxNews.com, while Democrats linked to NYTimes.com. Established media outlets dominated the list of domains that the GOP candidates linked to, including CNN, to which Democrats also linked. The Republicans infrequently linked to their party website, except for the voter registration website hosted by the Republican National Committee, whereas for Democrats, the Democratic Party website was the most linked site. Democrats also linked to three websites that encouraged people to vote, but were unaffiliated with the Democratic Party.

Table 3. Top Domains by Party on Facebook.

	Links from Dems	# of links	Links from GOP	# of links
1	democrats.org	83	foxnews.com	77
2	iwillvote.com	63	cnn.com	46
3	nytimes.com	28	vote.gop	40
4	voyavotar2016.com	17	c-span.org	33
5	myfirstvote.tumblr.com	5	washingtonpost.com	23
6	cnn.com	5	unionleader.com	23
7	baltimoresun.com	3	msnbc.com	19
8	bloomberg.com	3	foxbusiness.com	19
9	bostonglobe.com	3	time.com	15
10	redcross.org	3	newsmax.com	15

The Democratic candidates also linked to Democratic organizing and activist sites: ActBlue.com, which is a fundraising and mobilizing organization application and network; Democrats.org (the Democratic Party website); and MoveOn.org, a left-leaning political action group. Bernie Sanders also linked to CA.gov, which is California's government site, and Hillary Clinton linked to USA.gov, which is a public service website of the federal government.

The Republican candidates linked to substantially more domains. Media outlets that received links from Republicans ranged from right-leaning sites (such as DrudgeReport.com, WashingtonTimes.com, FoxNews.com, and WashingtonExaminer.com), to mainstream media (such as AP.org, Time.com, and LATimes.com), to those often thought of as left-leaning elite news sites (including NYTimes.com and TheGuardian.com). They also linked to business news sites, such as Forbes, CNBC, and Fortune, and to sites that target younger voters, such as MTV.com, BuzzFeed.com, and CC.com (the domain for the television channel Comedy Central). Finally, like the Democrats, Republicans linked to several state government websites (including Ohio.gov, Texas.gov, and WI.gov). They linked to seven university domains, including Quinnipiac University (likely referring to a public opinion poll), Colorado Christian University, and Miami Dade College.

Table 4. Twenty Domains That Received Links From Candidates From Both Parties on Facebook, Along With the Number of Links From Each Party.

Domain	D	R	Domain	D	R
cnn.com	5	46	cbsnews.com	1	11
c-span.org	1	33	wmur.com	1	7
nytimes.com	28	5	bostonglobe.com	3	4
washingtonpost.com	1	23	nydailynews.com	1	5
msnbc.com	1	19	redcross.org	3	2
abcnews.com	1	14	people.com	1	4
bloomberg.com	3	11	richmond.com	1	4
desmoinesregister.com	2	11	thedailybeast.com	2	1
nbcnews.com	1	12	businessinsider.com	1	2
usatoday.com	1	12	reuters.com	1	2

Of the domains that received links, only 23 (7%) received links from candidates from both parties. As Table 4 shows, they primarily connected to mainstream national news outlets, such as WashingtonPost.com, ABCNews.com, CNN.com, Bloomberg.com, and BusinessInsider.com, as well as a critical early-state newspaper, DesMoinesRegister.com. Candidates from both parties also linked to RedCross.org, likely to urge supporters to contribute following natural disasters.

Twitter

As with Facebook, the patterns of hyperlinking in tweets from candidates revealed three categories of websites: those linked to only by Democrats, only by Republicans, and by candidates from both parties. Our processed data set contains 752 domains to which candidates linked on Twitter. Of those, 108 (14%) domains received links from only Democratic candidates, 557 (74%) received links from only Republican candidates, and 87 (12%) domains received links from candidates from both parties. Though at a substantially higher rate than on Facebook, domains that received links from both parties were still a small minority on Twitter.

For comparison, Figure 1 provides a bar chart on the left of the number of domains the candidates linked to on Facebook and Twitter. The pie charts on the right show the percentage of those domains linked to by Republicans, Democrats, and candidates from both parties for both Facebook and Twitter.

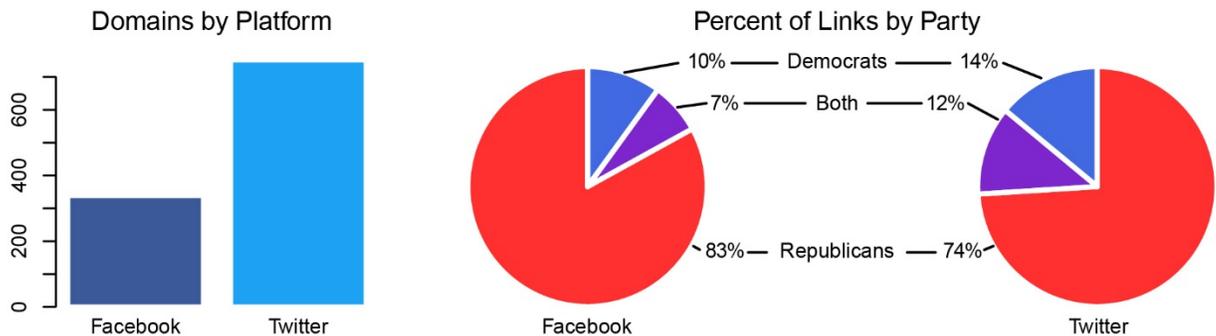


Figure 1. Bar chart shows the number of domains linked to by all candidates on each platform. On the right, the pie charts show the percentages of domains linked to by the candidates for each party (or both) on the two platforms.

Table 5 shows the top 10 most linked domains for each party on this platform. The data revealed that campaigns primarily linked to national media sites, such as CNN.com and WashingtonPost.com. But there were also important differences by party. Republicans heavily out-linked to Fox News and to key regional media outlets, such as the *Union Leader* newspaper website in New Hampshire, which is the second voting state during the primaries. The Republicans were also more likely to link to websites devoted to federal politics, such as *The Hill* and *Washington Examiner*.

Table 5. Top Domains by Party on Twitter.

Links from Dems		# of links	Links from GOP		# of links
1	iwillvote.com	115	foxnews.com		266
2	nytimes.com	82	cnn.com		119
3	washingtonpost.com	57	desmoinesregister.com		114
4	msnbc.com	32	washingtonpost.com		111
5	abcnews.com	32	unionleader.com		100
6	huffingtonpost.com	28	wsj.com		98
7	cnn.com	19	c-span.org		82
8	c-span.org	13	washingtonexaminer.com		75
9	actblue.com	11	time.com		74
10	time.com	11	thehill.com wmur.com		60

Of the 752 domains that appeared in tweets from candidates, 87 domains received links from candidates of both parties. Table 6 shows the 20 most linked of these domains. Other than the *Daily Caller*, these domains corresponded entirely to mainstream media sites that are largely national news, with the exception of WMUR.com, the New Hampshire ABC affiliate. Of note, Democrats and Republicans sent a very similar number of links to MSNBC, the liberal-leaning cable news site. FoxNews.com received the largest number of links from Republicans, while NYTimes.com received the most links from Democrats.

Table 6. Twenty Domains That Received the Most Links From Candidates From Both Parties on Twitter, Along With the Number of Links From Each Party.

Domain	D	R	Domain	D	R
foxnews.com	4	266	msnbc.com	32	37
washingtonpost.com	57	111	thehill.com	3	60
nytimes.com	82	59	wmur.com	2	60
cnn.com	19	119	politico.com	6	55
desmoinesregister.com	9	114	huffingtonpost.com	28	22
wsj.com	4	98	bostonglobe.com	7	37
c-span.org	13	82	usatoday.com	4	35
abcnews.com	32	53	cbsnews.com	4	34
time.com	11	74	nbcnews.com	4	34
washingtonexaminer.com	1	75	dailycaller.com	1	37

The constellation of links from Democrats on Twitter was noticeably different from Democrats' out-links on Facebook, which primarily pointed at activist and Democratic Party sites. On Twitter, Democrats still linked to Democrats.org and ActBlue.com, and they linked to interest group sites such as LCV.org (League of Conservation Voters) and AARP.org; however, they also linked to a wider range of news sites, such as ETOonline.com, Nowth.is, RollingStone.com, and Univision.com.

Republicans linked to a much larger number of distinct domains than Democrats did. Similar to their use of Facebook, GOP candidates linked to a wide range of news sites, including more regional news

outlets: Chicago.SunTimes.com, Syracuse.com, and TimesUnion.com. The links pointed to more right-leaning media sites, such as DrudgeReport.com and DailyMail.co.uk. There were also links to a variety of additional news sites for key primary states, such as Arizona (e.g., AZCentral.com), Florida (e.g., MiamiNewTimes.com), and New Hampshire (e.g., NHNewsNetwork610.com). Like Democrats, Republicans also linked to interest group sites (such as FreedomWorks.org and YellowRibbonFund.org).

Within Party

Because of the small number of candidates vying for the Democratic Party nomination, we restricted our within-party analysis to the Republican candidates. We further focused on the 11 candidates who appeared at least once on the "main stage" for Republican primary debates that occurred in the fall 2015.⁷ We also restricted this analysis to messages sent between January 3, 2015, and May 31, 2016, which covers the surfacing and primary stages, when these candidates were actively competing for the Republican Party nomination.

Facebook

Over this period, some candidates posted substantially more links to news and information sites on Facebook than others. After processing and filtering domains as described earlier, John Kasich posted 111 links, Ted Cruz posted 87, and Rand Paul posted 74; meanwhile, Marco Rubio only posted six links, Jeb Bush 12, Ben Carson 15, and Chris Christie 16. On this platform, Scott Walker only linked to his own website and to content-hosting sites, crowdfunding sites, and other types of sites that we exclude from this analysis.

These 11 Republican candidates linked to 214 different domains during the surfacing and primary stages. Most of these domains (175) received links from only one candidate, whereas a smaller number received links from two candidates (25), three candidates (5), or four or more candidates (9). Only one domain received links from more than six candidates: Fox News, to which nine of the 11 candidates linked. Table 7 shows a list of the domains that received links from the most candidates, all of which were major media outlets.

Table 7. Top Domains From "Main Stage" Republican Candidates on Facebook.

Domain	Candidates	Links	Domain	Candidates	Links
foxnews.com	9	28	nbcnews.com	4	9
washingtonpost.com	6	7	foxbusiness.com	4	7
c-span.org	5	17	thehill.com	4	6
cnn.com	5	16	usatoday.com	4	6
time.com	4	10			

⁷ These 11 candidates were Jeb Bush, Ben Carson, Chris Christie, Ted Cruz, Carly Fiorina, Mike Huckabee, John Kasich, Rand Paul, Marco Rubio, Donald Trump, and Scott Walker.

Figure 2 shows a network of connections between candidates and sites to which they linked.⁸ Results suggest that candidates primarily linked to sites that no other candidates linked to. The algorithm we used for this layout (Sugiyama, Tagawa, & Toda, 1981) iteratively adjusted the node placements to minimize edge crossings, with the result that actors who were closer together tended to have more similar linking behavior. Christie and Bush, for example, tended to have somewhat similar linking behavior as compared with Cruz and Trump. This could also mean that Christie and Bush both linked to sites that Kasich and Cruz linked to, but not necessarily the same sites as each other.

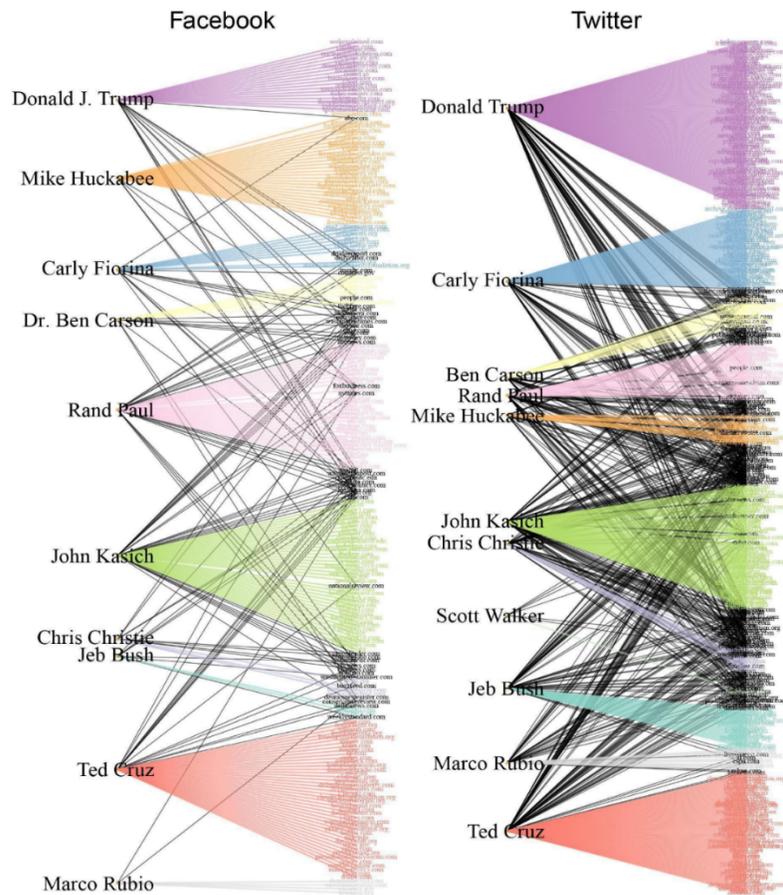


Figure 2. Network plot of links between leading Republican candidates and domains. Domains and edges in black indicate links from multiple candidates to a given domain. Domains in any color other than black received links from only one candidate.

⁸ Note that because of the large number of links and domains, the version of the within-party plot included here is a smaller version. An online version is more legible: https://github.com/sjacks26/hyperlink-homophily/blob/master/WithinParty_AnalyticArtifact_V2.pdf.

Twitter

Some candidates were more active than others in posting links on Twitter, with Carly Fiorina (518) and Donald Trump (452) both posting more than 400 links. Mike Huckabee (79), Marco Rubio (55), and Scott Walker (8) all posted fewer than 100.

In total, the 11 leading Republican candidates linked to 515 different domains on Twitter during this period. More than half of these domains (391) received links from only one candidate, with fewer receiving links from two candidates (52), three candidates (25), or four or more candidates (47). Two domains (FoxNews.com and CNN.com) received links from all 11 candidates; two other sites received links from 10 candidates; and two sites received links from nine candidates. Table 8 shows a list of the domains that received links from the most candidates. As on Facebook, the sites that received links from the most candidates were major media outlets.

Table 8. Top Domains From "Main Stage" Republican Candidates on Twitter.

Domain	Candidates	Links	Domain	Candidates	Links
foxnews.com	11	153	wsj.com	9	56
cnn.com	11	77	nytimes.com	8	47
desmoinesregister.com	10	78	washingtonexaminer.com	8	45
time.com	10	59	thehill.com	8	35
washingtonpost.com	9	75			

Turning to the network plot of connections between candidates and the sites they linked to (Figure 2), our analysis suggests that there was more overlap in the sites that candidates linked to than on Facebook, but many candidates still tended to link to sites that no other candidates linked to. This perhaps reflects the higher rates of hyperlinking on Twitter compared with Facebook: With more links come more opportunities for overlap. Also, while Christie and Bush tended to have similar linking patterns on Facebook, Christie was much more similar to Kasich on Twitter even though Kasich was one of the candidates with a large set of sites that he alone linked to. This suggests that they may have tended to respond to the same news events on the same sites, resulting in the similar cross-linking. Likewise, Carson, Paul, and Huckabee had similar linking behavior.

Across Social Media Platforms

We asked whether campaigns were using their Facebook page in ways different from their Twitter account when they hyperlinked to third-party sources. Based on data shown in Tables 1–4, there are some noteworthy differences in how the candidates used the platforms. As data in Tables 1 and 3 suggest, there was little overlap of the most frequently linked domains on Facebook as compared with Twitter for the Democratic candidates. On Facebook, for example, Democrats tended to link to the Democratic Party website, Democrats.org, but on Twitter, they instead linked to Actblue.com, which is a Democrat-aligned activist and organizing website. They also linked to more voter-registration websites on Facebook than on Twitter. The Republican candidates did not have any voter registration site in their top links that was not

affiliated with a party, whereas they linked heavily to Vote.GOP, the Republican National Committee's voter registration site.

In terms of the number of links by party to domains (Tables 2 and 4), there were many similarities, such as reliance on national news sources, including USA Today, ABC News, CNN, and CBS News, as well as key regional outlets, such as Des Moines Register.com, and WMUR.com (the ABC news affiliate in Manchester, New Hampshire). On Twitter, the campaigns linked to more "born-digital" news outlets, such as Huffington Post.com, Daily Caller.com, and Politico.com. Of note, Republicans heavily linked to Fox News.com on Twitter, but this site did not show up in the list of top 20 most linked sites on Facebook.

Additional differences in the use of the platforms are noteworthy. Looking at the entire corpus of messages, using the same data set as the across-party analysis, we see in raw numbers that candidates posted 5,487 URLs to news and information website domains, but far fewer of these were posted to Facebook: Just 22% (1,201 links) were posted to Facebook, as compared with 78% (4,286 links) on Twitter. This suggests that there were distinct patterns in linking behavior on Twitter as compared with Facebook. Because there was so much more hyperlinking occurring on Twitter, we see that campaigns linked to a much broader variety of news and information sites than on Facebook. On that platform, the campaigns were less likely to link to a common set of sites; on Twitter, there was more convergence in the linking practices of Democrats and Republicans, and some news sites, such as Fox News, were universally shared by Republican candidates.

Discussion

This study sought to better understand what Thorson and Wells (2015) call *curated flows* of information in the digital media of U.S. presidential candidates during the 2016 presidential campaign. They urge scholars to better map the ways that political and social elites select, annotate, filter, and share news and information, given the fundamental destabilization of traditional news media in the digital age. Hyperlinking specifically is a technological affordance that inscribes curation flows in digital media, and our analysis of candidate hyperlinking practices reveals several insights. First, candidates aligned with one political party hyperlinked to news and information sites quite distinctly from opponents in the other party. Republican candidates collectively hyperlinked out to a set of news and information sites that were mostly distinct from those of Democratic candidates. Second, with the large pool of contestants vying for the Republican nomination, we found evidence that campaigns constructed information "lanes" to distinguish themselves from their opponents. Finally, we note that campaigns used Facebook and Twitter in different ways, with substantially more out-linking happening on Twitter to a more heterogeneous news and information space than on Facebook.

Our analysis suggests that candidates engaged in homophilous behavior with the bridges they created through their hyperlinks. This comports with the body of scholarship to date. Each party constructed an information environment that predominantly did not overlap with the other party's information environment. It is noteworthy that both parties made transversal and cognitive bridges—to use Foot and Schneider's (2006) conceptualizations—out to mainstream news sites, such as Bloomberg and CNN, the latter of which has attempted to remain ideologically neutral despite Republican accusations that it is a

liberal news site. Campaigns from both parties also linked to key regional outlets, such as the *Des Moines Register*, which is Iowa's most influential news outlet. Given Iowa's importance as the first deciding state of the primaries and caucuses, that news outlet has a prominent position in the information flows that many candidates construct; therefore, links to the DesMoinesRegister.com are less easily differentiated by candidate as compared with links to, for example, TheFederalistPapers.org, to which only Ted Cruz linked on Twitter.

While all the campaigns tended to link to mainstream news sites, there were some noteworthy differences by party. The Republicans were more likely to link to traditional broadcast news sites, such as ABC and NBC, while Democrats tended to link to younger, born-digital media sites such as Daily Beast. Because voters who affiliate with the Republican party tend to be older (Pew Research Center, 2018), and older Republicans tend to consume media from traditional broadcast news sites (Matsa, 2018), this finding suggests that Republican candidates were engaging in alignment and identity work with their supporters by referencing the news media outlets that their supporters used and were familiar with.

We believe that a major contribution of this work is the finding of distinct hyperlinking practices to news and information sites by each Republican candidate. It seems that just as candidates work to own particular issues to distinguish themselves from opponents, they do something similar with news and information. In examining the rhetorical differentiation of the candidates via information ownership of the Republican candidates, we observed little overlap in the sites to which candidates pointed their followers on Facebook, and no obvious clusters of candidates linking to common sites emerged from the data. This was also true on Twitter, despite more overall overlap in linking practices. We thus suggest that campaigns engage in information ownership, a strategic curation of news and information sites that are distinct from opponents and that help the candidate to justify and make his or her argument to his or her supporters and persuadable voters.

We can see through hyperlinks that both Republican and Democratic candidates curated news and information flows with their publics to mainstream or legacy media sites, which is a finding similar to research on the blogosphere (Hargittai et al., 2008; Nahon & Hemsley, 2014). Republican and Democratic candidates had distinct practices in how they linked to their party and to alternative news sources. It is noteworthy that the most linked-to site for Democrats was the Democratic National Committee website, but for Republicans, only Trump and Jim Gilmore linked to the Republican National Committee site once on Facebook, and only Trump linked to it on Twitter. Instead, FoxNews.com was the most linked-to site for Republicans—an unsurprising finding, given that Fox is a Republican and conservative-ideology-aligned news and entertainment site. This highlights the prominence of FoxNews.com in driving the Republican Party agenda in ways that the official party site does not. Intriguingly, Republicans also frequently linked to a more liberal-leaning news site, MSNBC.com. It is possible that the links were to news stories that Republican candidates were highlighting for ridicule or attack, yet the fact of hyperlinking was still potentially driving their supporters to a liberal news site. As Foot and Schneider (2006) note, when campaigns link to third-party sites, they are creating meaningful connections to those sites, both literally and cognitively.

Collectively, the Republican candidates linked to a much more diverse set of news and entertainment sites than did Democrats. On average, Republicans linked to 31 different sites on Facebook,

whereas Democrats only linked to 14; on Twitter, Republicans linked to 70 sites, whereas Democrats linked to 50. Democratic candidates tended to link to fewer sites beyond those that Republicans also linked to, and they tended to be distinctly Democratic activist sites. The Democratic candidates, via their out-links to activist and get-out-the-vote sites, were highlighting their value alignment with social and political activism on the left as well as efforts to get more people registered and to the polls. Yet, the lack of diversity by the Democratic candidates could mean a more restrictive information environment for the party. Alternatively, this result may be an artifact of the larger Republican field and the diversity of positions they represented. More research on this is needed.

In terms of strategic platform differentiation, our study answers Kreiss and colleagues' (2018) call to conduct comparative platform research. We found differences in how campaigns used Twitter and Facebook. Our data suggest that the candidates constructed an information environment on Facebook with less crossover than was the case on Twitter. There, our results show that more domains received links from multiple candidates on Twitter than was the case for Facebook, though more than three quarters of all domains still received links from only one candidate. In other words, the curation flows on Twitter may have been more permeable, with more overlap in the information flows there than on Facebook. This may be partly explained by the different audiences whom candidates were trying to reach (Kreiss et al., 2018). Campaigns saw Twitter as a vital medium for communicating with a broader public, including journalists, while also speaking to influencers in their support base (Kreiss, 2014). The larger variety of news and information sites may suggest that campaigns saw Twitter as the site to make persuasive arguments and to call attention to key information via third-party sites. More research is needed on how campaigns view Facebook and its role in political campaigning. Thorson and Wells (2015) postulate that individual actors create and experience distinct information flows via their social media and online news diets and that more research is needed to understand the increasing complexity of the information environment. Our study contributes to that call. Our data suggest that political candidates engage in distinct content curation. The implication of this finding is that those citizens who are politically active and align themselves with a given political party and candidate likely experience a distinctly different curated information flow from those who support another candidate. Although Thorson and Wells highlight the "curating actors" of journalists, social contacts, algorithms, individuals, and "strategic communicators," our study underscores that during political campaigns, when public attention is heightened because of the increased news coverage and attention to politicians running for political office, political candidates further contribute to the strategic curation of information that shapes the information environment experienced by citizens.

This study has limitations. As noted in the methods section, we opted not to classify the news and information sites linked to by the candidates by ideology because of the validity challenges of accurately classifying the sites along political stance. Although we provided initial descriptions and highlighted distinct differences of the news sources by Republican candidates, future research might conduct further close analysis of the sources in conjunction with the position of the candidates via their speeches, ads, and other communication to better understand their strategic choices.

Another limitation of this study is that we only focused on Republicans for the within-party analysis. Given that by March 2016, there were only two viable Democratic candidates, we opted to focus on the larger field of Republican primary candidates. Because the 2020 presidential election has a large

field of Democratic primary candidates, this study could be replicated to see if similar patterns emerge. If so, further theorizing could be offered to predict this type of rhetorical differentiation via curated news and information flows.

A final limitation results from the data used for this study. We examined the digital traces of campaign practices (i.e., the hyperlinks in messages sent by candidates on Facebook and Twitter), but we did not have data that could provide direct insight into the strategic logic used by campaigns. Instead, we inferred strategy based on the patterns of behavior we saw. Thus, our study complements Kreiss and colleagues' (2018) research using interviews with campaign staff. In an ideal world, a single study would use interviews to uncover strategic decision making and would use trace evidence of behavior to confirm whether those strategies were followed in practice. Barring this ideal scenario, Kreiss and colleagues' study and our study provide reinforcing evidence that different platforms are used strategically for different purposes.

Conclusion

This study examined the role of hyperlinking in strategic curation flows of information by U.S. presidential candidates in the 2016 election. Using data from Facebook and Twitter, we parsed out the URL domains posted on the platforms on candidates' free campaign accounts and pages, and isolated those to news and information sites. Our results suggest that Republicans engaged in distinct linking practices that differentiated themselves from Democrats, thus constructing homophilous information flows that constructed party identity. At the same time, the 17 Republican candidates engaged in distinct linking practices that enabled them to engage in information ownership to differentiate themselves from their opponents during the surfacing and primary stages. Our data also suggest that candidates engaged in strategic platform differentiation by engaging in hyperlinking practices on Twitter and Facebook in distinct ways.

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