Received 26 October 2015
Revised 13 January 2016
Accepted 16 January 2016

Making friends and enemies on social media: the case of gun policy organizations

Melissa Merry
Department of Political Science,
University of Louisville, Louisville, Kentucky, USA

Abstract

Purpose – The purpose of this paper is to explore the role of interest groups in the formation of online echo chambers and to determine whether interest groups' use of social media contributes to political polarization.

Design/methodology/approach – This study used a content analysis of nearly 10,000 tweets (from 2009 to 2014) by the Brady campaign to Prevent Gun Violence and the National Rifle Association to examine how groups engage with their political allies and opponents.

Findings – The results indicated that both groups engaged primarily with their supporters on Twitter while avoiding confrontation with their opponents. In particular, both groups used hashtags designed to reach their supporters, retweeted messages almost exclusively from other users with whom they agreed, and disproportionately used Twitter handles of their allies, while avoiding the use of Twitter handles of their opponents.

Practical implications – The findings suggest that interest groups' use of social media accelerates the formation of online echo chambers, but does not lead to an increase in polarization beyond existing levels, given practices that maintain civility between opposing sides.

Originality/value – This is one of few studies to examine the role of interest groups in the formation of online echo chambers. It also uses a novel approach – the examination of both the interactions that occur among social media users and those that are explicitly avoided.

Keywords Social media, Framing, Twitter, Polarization, Echo chambers, Gun policy

Paper type Research paper

Introduction

Political polarization is widely documented in the USA, observed both among elites and the mass public (see Jacobson, 2003; McCarty *et al.*, 2006), and widely identified as a threat to reasoned political discourse and deliberation (see Bishop, 2009; Huckfeldt *et al.*, 2004). Many scholars contend that the internet exacerbates polarization by encouraging interactions among like-minded individuals, who consequently become more extreme in their opinions (Kelly *et al.*, 2005; Sunstein, 2001, 2007). So-called "echo chambers" – wherein political discussions are primarily or exclusively one-sided – have been discovered in numerous online communities (see Adamic and Glance, 2005; Boutet *et al.*, 2013). Most research has examined echo chambers through the behavior of individuals (see Gruzd and Roy, 2014; Himelboim *et al.*, 2013), with some attention granted to the role of opinion leaders (see Choi *et al.*, 2014; Hargittai *et al.*, 2008). The role of interest groups, however, has been understudied. This void in the literature is surprising, given that interest groups have long been considered critical mediators between policymakers and the public (Arnold, 1990; Kollman, 1998). This mediating role is no less relevant in the digital age, in which interest groups regularly use online channels to fundraise, build coalitions with other organizations, and mobilize supporters, among other activities (Chadwick, 2007). It is thus essential to examine how

Online Information Review
Vol. 40 No. 5, 2016
pp. 624-642

1468-4527
DOI 10.1108/OIR-10-2015-0333

the online practices of interest groups contribute to the echo chamber phenomenon and to investigate the implications of these practices for political polarization.

This research focusses on social media – defined by Tredinnick (2006) as websites that emphasize user-participation and user-generated content – as prime venues for the formation of online communities. Based on a content analysis of nearly 10,000 tweets by two gun policy organizations, I show that groups primarily engage with their supporters on Twitter while avoiding direct confrontation with their opponents. These findings suggest that interest groups' use of social media likely accelerates the process whereby like-minded individuals cluster together – also known as homophilous sorting (see McPherson *et al.*, 2001). Further, given practices that maintain civility between opposing groups, these results suggest that groups' use of social media does not lead to an increase in polarization beyond existing levels.

Online echo chambers and polarization

It is commonly assumed that the internet eliminates barriers to communication, making it easier for individuals to find and associate with others who share their views (Benkler, 2006; Farrell, 2012). According to Sunstein (2007, pp. 60-64), this process of homophilous sorting inevitably leads to polarization, given three circumstances: (1) individuals within echo chambers are only exposed to one-sided arguments, (2) individuals conform to group expectations, adopting positions that they believe will be viewed favorably by others, and (3) the solidarity within online communities increases individuals' confidence in – and hardening of – their positions.

There is much evidence suggesting that the internet encourages homophily, but less conclusive support for polarization in online communities. For instance, scholars have found that political bloggers link disproportionately to other bloggers who share their political views (Adamic and Glance, 2005; Hargittai *et al.*, 2008). Research examining Twitter has found that individuals tend to repost messages of other users with whom they agree (Conover *et al.*, 2011; Feller *et al.*, 2011). These findings are, however, tempered by the fact that individuals are occasionally exposed to information that does not match their pre-existing beliefs. Such cross-cutting exposure can be the result of intention, as individuals seek out and engage with those who hold opposite political views (see Conover *et al.*, 2011; Yardis and boyd, 2010). For instance, in a study of tweets responding to the assassination of Robert Tiller (an abortion doctor), Yardis and boyd (2010) found that some individuals interacted with those on the other side of the abortion debate and used hashtags, or keywords preceded by the "#" symbol, to draw the attention of their political opponents[1]. Similarly, Hargittai *et al.* (2008) found that political bloggers substantively addressed points made by other bloggers with whom they disagreed. As noted by O'Hara and Stevens (2015), this behavior reflects the fact that some people engage with their opponents online simply because they enjoy arguing. Cross-cutting exposure can also occur inadvertently, as recent research on social media as found (Barberá, 2015). In particular, Barberá (2015) observed that networks on Facebook and Twitter include a substantial proportion of "weak ties," through which individuals are incidentally exposed to cross-cutting information.

As for polarization, much evidence for this comes from survey-based experiments showing that people who discuss political issues with others who hold the same views become more extreme in their positions (Warner, 2010; Sunstein, 2001). However, it is unclear whether these effects hold over time (see O'Hara and Stevens, 2015). Farrell (2012) suggests that polarization mainly occurs among a select group of participants in online communities: i.e., those who are highly politically aware and who

seek out partisan information. Interest group leaders and activists are potentially among this set, and, to the extent that they influence those who take a more casual interest in politics, it is possible that they could induce polarization among some members of the public.

Interest group incentives

Scholars who study political polarization typically assume that exposure to cross-cutting information is good for democratic governance insofar as it leads to increased awareness (and tolerance) of opposing views, better informed opinions, and more legitimate policy decisions (see Mutz, 2002). Though these may be noble aspirations, interest groups operate with a different set of incentives which may or may not contribute to such reasoned deliberation. First, interest groups want to succeed in their advocacy efforts (see Lawrence *et al.*, 2010). To the extent that homophily facilitates collective action (see Shirky, 2008) and fosters political participation (Kwak *et al.*, 2005), interest groups are likely to behave in ways that encourage the formation of echo chambers. However, there is also reason to believe that interest groups will actively engage with their political opponents. Far from inducing moderation, engaging with one's opponents online could strengthen one's opinions (Wojcieszak, 2010); interest groups might thus provoke their opponents to strengthen the convictions and commitment of their own supporters.

Further support for the expectation that groups will engage with their opponents online can be found in the public policy and communications literatures. As noted by Schattschneider (1960), political actors who perceive themselves as disadvantaged in policy debates often seek to "expand the scope of conflict," drawing in more (sympathetic) participants and thereby destabilizing existing power arrangements. The act of provoking one's opponents on social media could be consistent with this strategy insofar as it generates controversy and draws increased public attention. More generally, the literature on framing suggests that interest groups will be responsive to the claims made by their policy opponents. Framing, or the way that issues are interpreted and described, is widely recognized as influential in the policy process (Stone, 1989, 2002; Jones *et al.*, 2014). By selectively highlighting certain attributes of policy problems while ignoring others, political actors can shape public understanding of issues, alter the make-up of political coalitions, and influence the choice of policy remedies (Benford and Snow, 2000; Haider-Markel and Joslyn, 2001). Amid the recognition that framing techniques constitute the "political battlefield of warring groups" (McBeth *et al.*, 2005, p. 414), the counter-framing literature has begun to examine the interplay between opposing sides in policy debates. The process by which groups respond to the framing of their opponents is assumed to be antagonistic, given that opposing groups only represent threats to one another (Meyer and Staggenborg, 1996; Knight and Greenberg, 2011). However, scholars disagree over how groups compete with their adversaries. One model suggests that groups engage in dual framing, i.e., simultaneously promoting their own interpretations of policy problems without directly addressing the frames offered by their opponents (see Baumgartner and Jones, 1993; Chong and Druckman, 2013). Another model suggests that groups actively refute the characterizations of their opponents, attacking both their arguments and character (Boscarino, 2016). Under both models, we might expect interest groups to at least pay attention to their opponents' online communications. Under Boscarino's model, we might also expect interest groups to directly engage with their opponents online as they compete with one another.

Twitter and policy debates

Twitter is a particularly relevant forum for examining the role of interest groups in online echo chambers and political polarization. Created in 2006, the site became popular as a venue for political communication in 2008 (Marwick and boyd, 2011). According to Alexa.com, it is now the eighth most popular website in the USA, averaging over 316 million unique site visitors per month in 2015 (Twitter.com). Numerous studies have used Twitter to examine echo chambers at the individual level (see Colleoni *et al.*, 2014; Conover *et al.*, 2011), and for good reason. Conversations on Twitter are public by default – in contrast to other social media, such as Facebook – making it possible for users to observe and participate in discussions that they might otherwise miss. Twitter also contains numerous features that enable both homophily and cross-cutting exposure. First, users can "follow" other users, creating networks of people who read and respond to each other's tweets. Second, Twitter allows individuals to signal other users, using the "@" symbol, followed by the user's Twitter handle. This can be done in direct response to a user's comment, as in tweets beginning with "@username" notation, followed by a message directed at that individual. One can also mention other users in tweets in order to attribute them as sources of information or just to draw their attention. Finally, one can retweet, or repost, other users' messages; this is typically done using the symbol "RT@" followed by the original tweet. Users often modify or add commentary to retweeted content, leading the original authors to notice and respond (see boyd *et al.*, 2010). Third, users can utilize hashtags, which are similar to tags used to categorize various kinds of web-based content; hashtags are searchable and often generate conversations among users on particular topics of interest (boyd *et al.*, 2010; Lindgren and Lundström, 2011). Previous research has found that follower and retweet networks are largely homphilous, but that mentions and hashtags generate cross-cutting exposure (Conover *et al.*, 2011; Colleoni *et al.*, 2014).

Twitter offers additional advantages for investigating interest groups' role in echo chambers. Through the above-mentioned features, the medium offers an unprecedented level of precision in identifying the audiences of interest group communications. Previous research has shown that interest groups vary the content of their communications based in part on audience characteristics (Merry, 2012), yet it is difficult to determine the audiences of many online sources, such as websites or blogs. Twitter makes it much easier to determine the targets of group communications (see Bruns and Moe, 2014). For instance, for tweets containing neither hashtags nor mentions, we can assume that groups are speaking mainly to their followers – and operating at what Bruns and Moe (2014) call the "meso" level. For tweets containing mentions, we can assume groups are targeting specific users (on the interpersonal "micro" level). For tweets containing hashtags, we can assume that groups are operating at the "macro" level of "ad hoc publics" – speaking not only to their followers, but also to those with an interest in particular subjects (Bruns and Moe, 2014, p. 20).

Further, Twitter (among other social media) offers a unique opportunity to study how opposing interest groups compete with one another. Prior to the advent of social media, interest groups occupied non-overlapping online spaces – their own websites, their own e-mail lists – which likely did not preclude monitoring of one another, but did not facilitate it either. On Twitter, opposing groups are brought much closer together; the site makes it easier to monitor the framing techniques and other political tactics of opponents and even to communicate directly to those on the opposing side. As such, Twitter offers exciting opportunities to examine interest groups' communication strategies and their impacts.

The case of gun policy

Gun policy represents an ideal case study for this research for a number of reasons. First, many scholars place interest groups at the center of their explanations of the dynamics of gun policy (see Goss, 2006; Spitzer, 2008). Spitzer (2008, p. 116), for instance, notes that the National Rifle Association (NRA) is particularly adept at mobilizing its members through the use of alarmist rhetoric, while Goss (2006) suggests that gun control organizations made strategic errors in their selection of policy goals in the 1970s and 1980s. Second, gun policy is a highly salient issue, comprising one of the longest standing debates in American politics (Callahan and Schnell, 2001). Groups on both sides of the issue invest heavily in public outreach – in forums such as social media – to build support for their causes, seeking to increase their political power through grassroots mobilization and membership recruitment. Finally, gun policy is an issue area in which participants on either side hold vehemently to their positions – whether in defense of Second Amendment rights or in support of gun violence victims and a perceived need to enact gun reform (Spitzer, 2008). Thus, we might expect this issue area to especially prone to antagonistic rhetoric and polarization in online forums; if the results suggest that gun policy groups do not contribute to polarization on social media, the findings would constitute strong evidence against the linkage between homophily and polarization.

Given that the role of interest groups in the formation of online echo chambers has been given little, if any, scholarly attention, this study poses research questions as opposed to hypotheses. Collectively, these questions address the extent to which interest groups facilitate homophily and engage in cross-cutting discussions:

(1) What are the audiences of groups' tweets? Do they primarily target their followers, or do seek out broader – and potentially more diverse – audiences through the use of hashtags?

(2) Which users do groups interact with through mentions and retweets? Do they interact only with their supporters, or do they directly engage with opponents?

(3) Which users do groups avoid interacting with on Twitter? Do they tweet about particular political actors without using their Twitter handles? If so, what might drive groups not to directly signal people whom they are discussing on Twitter?

Research data and methods

Data were drawn from two interest groups, one on each side of the gun policy debate: the NRA and the Brady campaign to Prevent Gun Violence. These organizations are among the largest, most well-established gun policy interest groups. With more than four million members, the NRA is widely viewed as the most powerful gun rights organization in the USA, having "dominated and defined gun politics for most of the last century" (Spitzer, 2008, p. 80). The Brady campaign to Prevent Gun Violence (known as Handgun Control, Inc. before 2001) has been active in gun politics since the 1970s and is credited with influencing passage of gun control measures at the federal and state levels in the 1980s and 1990s, despite having approximately one-tenth of the resources of the NRA (Spitzer, 2008, pp. 102-103).

All tweets from the two organizations were collected from July 21, 2009 to May 24, 2014. Within this time frame, the Brady campaign posted 5,443 tweets using the Twitter handle @bradybuzz, and the NRA posted 4,475 tweets using the Twitter handle @NRA. The beginning date marked the earliest date on which both organizations posted on

Twitter, while the ending date was a function of time constraints in data collection and analysis. This nearly five year time span encompasses the full scope of groups' communications on Twitter, both during periods of "routine politics" as well as in the aftermath of mass shootings – most notably, the shooting at Sandy Hook Elementary in Newtown, CT in 2012 – and periods of heightened policymaking activity, including the push for gun reform in the US Congress in 2013. This extended time frame departs from previous work which focusses on specific events (see Boutet *et al.*, 2013; Feller *et al.*, 2011) or single years (see Colleoni *et al.*, 2014). Assuming that online echo chambers are not static phenomena – and that polarization occurs over time as individuals and groups interact with one another – this time frame is particularly useful.

For each organization, I collected every tweet and retweet, using the web search application Topsy (www.topsy.com). Topsy has indexed tweets dating to mid-2008 and allows one to search for tweets by user and date. This search engine has been used in previous research (see Guggenheim *et al.*, 2015; Krieck *et al.*, 2011) and is recommended in Twitter's official guide to journalists for researching news topics (Boutin, 2011).

The research method used in this study is content analysis, focussing on manifest content, or "elements that are physically present and countable" (Gray and Densten, 1998, p. 420). Several characteristics of each tweet were assessed, including the date, whether the tweet contained particular hashtags, whether it retweeted another user's message, and whether it mentioned another user via the "@username" notation. These features have been assessed in previous content analyses of Twitter (see Lindgren and Lundström, 2011; Thoring, 2011). In addition, I coded the substantive content of the tweets, looking in particular at the people and organizations mentioned in each group's tweets, regardless of whether these tweets included the users' Twitter handles. This is a significant departure from previous work examining homophily on Twitter, which focusses on retweets and interactions using Twitter handles (Conover *et al.*, 2011; Yardis and boyd, 2010). This work misses tweets in which key political actors are identified and characterized either positively or negatively – discussions which may influence how opposing groups view (and interact with) one another. To capture such discussions, I identified four general categories of political actors: heroes, allies, villains, and opponents (described in Table I). With each tweet, I identified which actors were mentioned and if they fit into any of the four categories, in which case the tweet was coded as one for each category that applied (and zero otherwise)[2]. The coding scheme identifies 28 different political actors and organizations, including Congress, President Obama, the federal judiciary, political candidates, gun control and gun rights organizations, state governments, the gun industry, law enforcement, and the media.

Given the straightforward nature of the content analysis, the bulk of the coding was done by one coder. As a reliability check, a second coder analyzed a randomly selected set of 1,000 tweets. As reported in Table II, inter-coder agreement was near perfect for one category, substantial for two categories, and moderate for one category[3].

Results

Audiences of groups' tweets

Figure 1 illustrates the total number of hashtags used by Brady campaign and the NRA on a daily basis over the time frame of the study, using a 30-day moving average.

The NRA did not use any hashtags in its tweets until November of 2011, while the Brady campaign's use of hashtags peaked in May of 2010, subsequently dropped off, and then increased again in 2012 (albeit to a lower average level). These findings may reflect organizational learning about how to best leverage Twitter (with one

Characterization	Description	Example
Ally	An individual, organization, or governmental entity that is not explicitly praised, but is identified as holding a policy position which the author of the tweet agrees	NRA (5/24/13): "Sheriffs join lawsuit challenging NY's new gun restrictions, calling provisions vague and impossible to enforce fairly"
Hero	An individual, organization, or governmental entity that is praised in some way	Brady campaign (3/14/12): "Nice work @clgoddard in Atlanta today protesting dangerous bills to force #guns on campus, K-12 schools and churches. www.ajc.com/news/georgia-government"
Opponent	An individual, organization, or governmental entity that is not explicitly blamed, but is identified as holding a policy position with which the author of the tweet disagrees	NRA (1/29/14): "President Obama vowed on Tuesday night to pursue #guncontrol with or without Congress"
Villain	An individual, organization, or governmental entity that is blamed for some type of wrongdoing	Brady campaign (5/10/10): "The NRA wants terrorists to have guns […] check out this pic! http://ht.ly/1Ig4X #p2 #funny #nra #npr #news #terrorist #law #cartoon"

Table I.
Character types in the content analysis of tweets

Narrative element	% agreement	Cohen's κ
Ally	91.0	0.50
Hero	89.8	0.65
Opponent	99.3	0.89
Villain	91.3	0.68

Table II.
Inter-coder reliability statistics based on a sample of 1,000 tweets

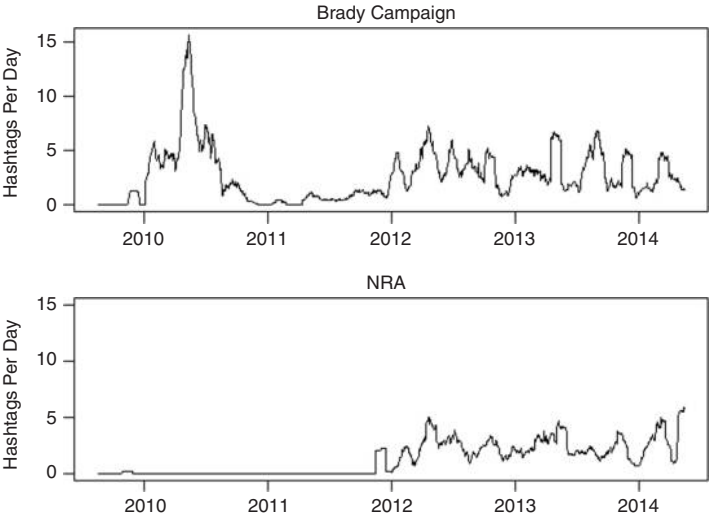

Figure 1.
Total hashtags per day in the tweets of gun policy organizations, using a 30-day moving average

organization initially using too few hashtags and the other using too many). They also indicate that the Brady campaign was generally more active than the NRA in seeking a broad audience for its communications until the end the time frame.

Table III shows the frequencies of the top ten hashtags used by each organization and identifies which hashtags were used by both groups.

As Table III makes clear, both organizations used hashtags to reach users on the other side of the issue. This is apparent in the Brady's use of #NRA, #gun, and #guns. The #NRA hashtag was the most commonly used hashtag by the NRA and, one can reasonably assume, followed by gun rights supporters. The #gun and #guns hashtag are seemingly neutral – although the #NRA's infrequent use of the hashtag reflects the organizational preference for the term "firearm" over "gun." Given that casual observers of the gun policy debate might be unaware of this rhetorical nuance, the Brady campaign's use of the term can also be assumed to reach a diverse audience including some gun rights supporters[4]. Similarly, by using the #guncontrol hashtag, the NRA likely reached those who support gun control[5]. The Brady campaign rarely used the #guncontrol hashtag, largely reflecting the organization's preference for the term "gun reform" over "gun control." The NRA's use of this hashtag increased following the Sandy Hook Elementary School shooting, during which time Congress considered proposals to expand background checks on gun purchases and to ban assault weapons. In short, both organizations used these hashtags to alert their own supporters, but in all likelihood did so with the knowledge that their tweets would reach diverse audiences.

Both organizations also used hashtags to produce homophily. The NRA used several hashtags geared to its members, including #NRAAM (to publicize the organization's annual meeting), #NRAAllAccess (for fans of the show "NRA All Access" on the Outdoor Channel), and #NRAgiveaway (for members who enter in drawings for free shooting gear). The organization also used hashtags to galvanize Second Amendment supporters – including #SecondAmendment, #ArmedCitizen, and #NRAstandandfight – and critics of the Obama Administration (via #fastandfurious). The #ArmedCitizen hashtag represents an adaptation of the long-standing "Armed Citizen" column in the NRA's magazine *The American Rifleman* (see O'Neil, 2007). Tweets containing this hashtag describe an individual using a firearm in self-defense, as in the following tweet from May 8, 2014: "#ArmedCitizen: Detroit Grandmother/

Brady campaign		National Rifle Association	
#gun or #guns	757	#NRA	690
#p2	400	#NRAAM	177
#FF or #FollowFriday[a]	345	#gun or #guns	101
#NPR	334	#2A, #2ndAmendment, or #SecondAmendment	101
#dem or #democrat [a]	259	#fastandfurious	90
#weare, #wabbt, or #wearebetterthanthis	174	#guncontrol[b]	86
#myvoice or #myvoicematters	151	#NRAvote	56
#finishthejob	136	#ArmedCitizen	52
#NRA	123	#standandfight or #NRAstandandfight	46
#liberal	115	#NRAAllAccess	45
#news	110	#NRAgiveaway	37

Notes: Shaded cells indicate hashtags used by both organizations. [a]These hashtags were used infrequently by the NRA; four tweets contained #dem, while 12 tweets contained #FollowFriday; [b]the Brady campaign used #guncontrol in 61 tweets

Table III. Frequencies of top ten hashtags used by the Brady campaign and NRA

Carry Permit Holder Shoots Her Way Out Of Ambush With Concealed Handgun bearingarms.com/stand-fight-detroit." The #fastandfurious hashtag refers to Operation Fast and Furious, a program in which the Bureau of Alcohol, Tobacco, and Firearms allowed illegally purchased weapons to be transferred to higher-level gun traffickers (with the goal of arresting drug cartel leaders); some of these guns were later tied to crimes, including the 2010 murder of a US Border Patrol agent.

The Brady campaign used several hashtags, primarily in 2010, to reach politically liberal audiences. The hashtag #p2 refers to "Progressives 2.0" and was designed by Tweet Progress founders to attract progressives to social media (Benjamin, 2010). The Brady campaign also targeted liberals via the hashtags #NPR (for fans of National Public Radio), #dem, #democrat, and #liberal. Starting in 2012, the Brady campaign used hashtags more specific to its policy objectives; among others, the hashtags #wearebetterthanthis, #myvoice, and #finishthejob were designed to mobilize gun reform supporters and to pressure Congress to pass legislation expanding background checks. The hashtag #wearebetterthanthis increased following mass shootings – including the Aurora, CO movie theater shooting and Newtown, CT school shooting, both in 2012. The hashtag #myvoice increased in the lead-up to congressional voting on a gun reform bill in April of 2013, while #finishthejob was introduced in 2013 after the failed legislation, possibly in an effort to rebuild political momentum. In short, the NRA and Brady campaign used hashtags to encourage homophily in at least two ways: by seeking out audiences with conservative or liberal leanings, and by encouraging their supporters join together in collective action.

Interactions with other Twitter users

To understand the nature of the groups' interactions with other users, it is instructive to look separately at retweets and mentions of other users. Overall, the Brady campaign was more active in retweeting other users; 19.8 percent of the organization's tweets were retweets, compared to 5.4 percent of the NRA's tweets[6]. To determine whether these retweets encouraged homophilous sorting, I coded all retweets based on whether the organization agreed or disagreed with the original user, or whether the original user did not hold a clear position[7]. Consistent with previous research, nearly all of the retweets (95.8 percent) were from users with which the organization agreed, while 4.1 percent were from neutral users, mostly media organizations[8]. The Brady campaign often retweeted other gun reform organizations, as in the following retweet of the Coalition to Stop Gun Violence from April 19, 2012: "RT@CSGV Thanks to #VT survivor @clgoddard for doing a great job last night on @TheLastWord. Keep @livingfor32, brother. t.co/DmhwXAem #p2." The NRA retweeted its supporters, as in the following tweet from February 19, 2014: "RT@L_Wheels #IAmTheNRA because without the right to defend oneself, all other rights become obsolete." In short, both organizations used retweets to amplify messages from like-minded individuals.

As for mentions, tweets containing these were coded in terms of their valence. In particular, mentions were coded as positive (meaning that the user was identified as either a "hero" or "ally"), negative (meaning that the user was identified as either a "villain" or opponent"), or neutral. This method is useful in that it focusses not just on who is mentioned but how they are portrayed; when an organization mentions a Twitter user in a positive or negative light, that sends a signal to all recipients of that tweet and may have a greater impact on homophilous sorting than a mention containing no evaluative component. For the Brady campaign and NRA, 25.5 and 20.4 percent of tweets, respectively, mentioned other users using the "@" symbol[9].

As indicated in Figure 2, most of the mentions in both organizations' tweets were neutral, meaning that they did not characterize the users either positively or negatively.

Among those containing an evaluative component, positive mentions were much more common than negative mentions. These results suggest that the organizations primarily used mentions, like retweets, in a manner that supported interactions among like-minded individuals[10].

Discussions about political actors on Twitter

Table IV shows the frequencies with which four categories of political actors appeared in the tweets of the Brady campaign and NRA and the percentages of tweets containing those categories that used their Twitter handles.

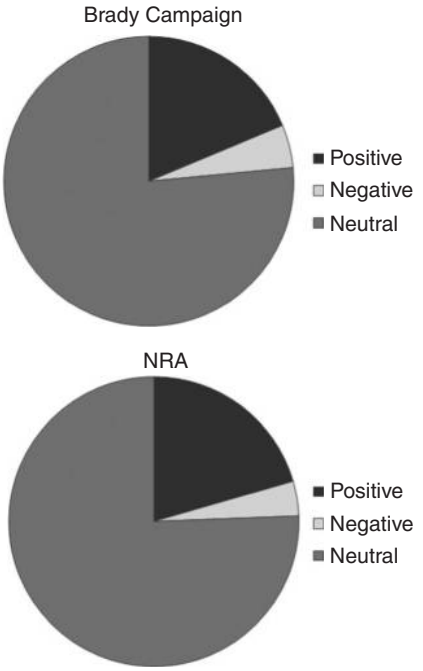

Figure 2.
Percentages of positive, negative, and neutral mentions in gun policy organizations' tweets

	Tweets containing character	Tweets using Twitter handle of character	% of tweets containing character that use Twitter handle
Brady campaign			
Ally	492	28	5.7
Hero	800	240	30.0
Opponent	25	1	4.0
Villain	730	66	9.0
NRA			
Ally	289	30	10.4
Hero	519	157	30.3
Opponent	259	10	3.9
Villain	508	26	5.1

Table IV.
Use of characters in tweets and percentages of characters whose Twitter handles are mentioned

Both organizations rarely used the Twitter handles of those whom they portrayed negatively – either as villains or opponents[11]. In contrast, both the Brady campaign and NRA used the Twitter handles of "heroes" in more than 30 percent of the tweets containing actors in this category; for comparison, 23.2 of all tweets contained mentions. Table V summarizes the results of a logistic regression model estimating the influence of blame attribution and praise on mentions. The dependent variable is whether a tweet mentions at least one user, while the independent variables are the four character types. The model controls for organization and year[12]. The model estimate for the "villain" category is negative and statistically significant; in particular, tweets containing villains are predicted to be 0.56 times less likely to mention other users than tweets that do not contain villains. In contrast, the estimate for the "hero" category is positive and statistically significant; tweets containing heroes are predicted to be 1.5 times more likely to mention other users.

Figures 3 and 4 show the five most common villains and heroes in the tweets of the Brady campaign and NRA, respectively, comparing the number of tweets in which the political actors are mentioned using their Twitter handles to the number of tweets in which the political actors are discussed without reference to their Twitter handles.

The Brady campaign's most frequent target of blame was the NRA, yet the organization used the NRA's Twitter handle in just 4.6 of tweets targeting its opponent. The following tweet from March 18, 2014 is typical of the Brady campaign's characterization of the NRA: "Gun violence is a public health threat, so why does the NRA keep vilifying doctors for saying as much?" By using "NRA" instead of "@NRA," the Brady campaign limited the audience to its followers, creating a sense of outrage among those who support gun reform while avoiding a direct confrontation with the opposing side. In contrast, the Brady campaign mentioned the Twitter handles of members of Congress and businesses more frequently (in 9.6 and 42.9 percent of tweets discussing these targets of blame, respectively). For instance, following a school shooting in Chardon, Ohio on February 27, 2012, the Brady campaign tweeted: "@johnboehner won't stand up for strong #gun laws even after #schoolshooting in home state #ohio." Among the businesses targeted by the Brady campaign, Facebook was blamed for allowing gun sales on its site, as in the following tweet from March 6, 2014: "We wish @facebook had taken a more meaningful step toward ending gun sales on their platform." In these instances, the Brady campaign targeted users with some

Table V.
Results of a binary logistic regression model estimating the probability of a tweet mentioning another user via the @username notation

	Estimate (SE)
Intercept	−5.63 (1.00)**
Ally	−0.71 (0.11)**
Hero	0.42 (0.07)**
Opponent	−1.15 (0.21)**
Villain	−0.57 (0.08)**
Organization (NRA)	−0.40 (0.05)**
Year (2010)	1.99 (1.01)*
Year (2011)	4.33 (1.00)**
Year (2012)	5.30 (1.00)**
Year (2013)	5.10 (1.00)**
Year (2014)	5.22 (1.00)**

Notes: *$p = 0.05$; **$p < 0.01$

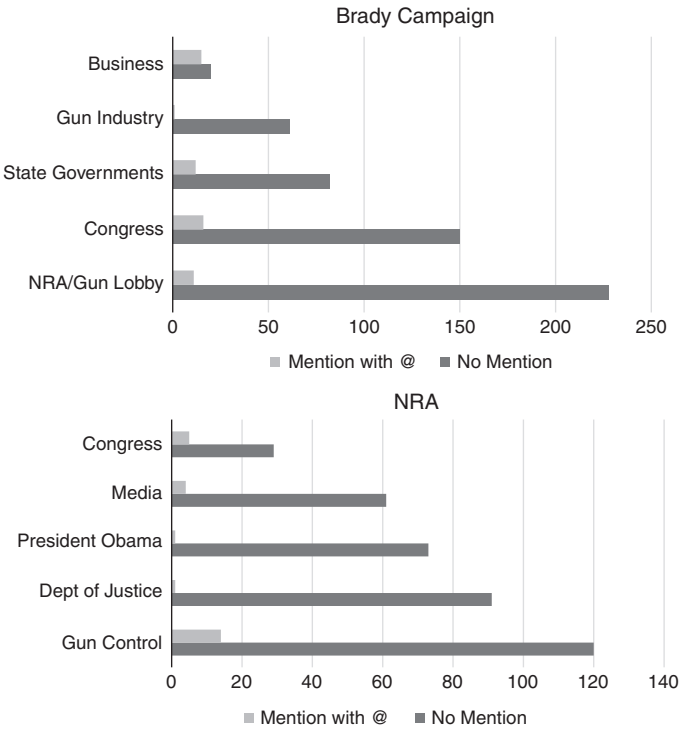

Figure 3.
Top five villains in the tweets of gun policy organizations

degree of authority or decision-making power; the mentions can thus be seen as a form of grassroots lobbying.

As for the NRA, gun control organizations were its primary targets of blame; the NRA used Twitter handles in 10.4 percent of tweets targeting these opponents. These tweets focussed primarily on Michael Bloomberg, the former New York Mayor and founder of Mayors Against Illegal Guns (now known as Everytown for Gun Safety), as in the following tweet from April 26, 2014: "#NRA's top lobbyist: Bloomberg is an "arrogant hypocrite" thehill.com/blogs/blog-briefing-rooÜ #NRAAM." As a controversial and polarizing figure (see Wilson, 2014), Bloomberg may have represented a safer target of criticism than the Brady campaign. Like the Brady campaign, the NRA also used mentions in tweets aimed at pressuring members of Congress, using Twitter handles in 14.7 percent of tweets blaming Congress.

In contrast to villains, some heroes were mentioned more often with Twitter handles than without, namely, gun control organizations (in the case of the Brady campaign) and NRA supporters (in the case of the NRA). For example, on June 7, 2012, the Brady campaign tweeted, "TY Ralph @waceasefire for excellent piece re how states with best #gun laws have less gun violence. #NRA laws kill us." Likewise, the NRA focussed on thanking its members, as in the following reply tweet from August 28, 2012: "@justindurko Tell your Grandma she rocks! We're glad to have you as an #NRA member!" These tweets share an underlying purpose: strengthening bonds among those on the same side of the debate, whether among members within an organization, across like-minded organizations, or between organizations and allies in positions of power.

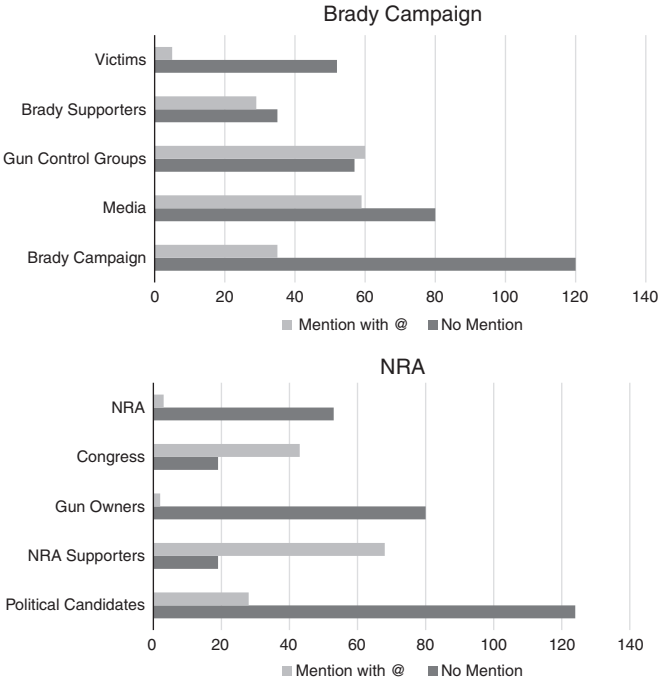

Figure 4.
Top five heroes in the tweets of gun policy organizations

Discussion and conclusion

Through an analysis of the audiences and subjects of gun policy groups' tweets, this study has shown that groups primarily used social media in ways that facilitated homophilous sorting. In particular, both the Brady campaign and NRA used numerous hashtags designed to reach their supporters, retweeted messages almost exclusively from other users with whom they agreed, and disproportionately used mentions in tweets containing those they portrayed favorably. Further, aside from their use of neutral hashtags, the groups avoided cross-cutting interactions; this is apparent in the fact that they tweeted frequently about their political opponents with mentioning them (i.e. using the @username notation)[13]. There are numerous potential reasons for this behavior. First, while directly confronting one's political opponents might galvanize a group's core supporters, it also entails the risk of negative publicity and of alienating some members of the public. In the case of gun policy, groups on both sides operate within constraints that may limit such confrontation, including sensitivity to victims and families of those affected by gun violence. Additionally, given that the NRA is often portrayed negatively in the media (see Patrick, 2002), the organization might avoid conflict to ensure that it does not feed into the organizational stereotype. Another reason for the lack of confrontation may be that both organizations are relatively moderate in their respective camps and, as such, more reluctant to engage in aggressive political tactics. For instance, the Coalition to Stop Gun Violence is known for pursuing a tougher stand on gun regulation than the Brady campaign, while the Gun Owners of America is more ideologically extreme than the NRA (Spitzer, 2008). These other organizations might

be more willing to engage with their opponents online, a possibility that should be explored in future research.

This avoidance of confrontation has intriguing implications. First, it maintains a level of civility between the two groups – whether this effect is intentional or inadvertent – as each organization allows the other to operate simultaneously on the same platform. Second, it suggests that the groups' online communications do not lead to increased animosity between the two sides. While the Brady campaign portrayed gun rights organizations as extremists and the NRA portrayed gun control supporters as elitists, these accusations are nothing new; the organizations began articulating these claims long before the advent of the internet. What is new in social media – in Twitter, particularly – is the opportunity to directly engage one's opponents, to instigate a virtual fight through online confrontation. Given that both organizations declined this opportunity, it appears that social media does not significantly raise the level of antagonism in the policy debate. Further, assuming that antagonism is one factor that contributes to political polarization, the findings suggest that groups' use of social media does not lead to an increase in polarization above existing levels. Future research should identify different ways of examining polarization among social media users and should explore whether this finding generalizes to other contentious issue areas, such as abortion or gay rights.

In addition to shedding light on the echo chamber phenomenon, this research contributes to the emerging counter-framing literature in policy studies. I find limited evidence that the opposing organizations responded directly to the content of each other's tweets, as predicted in Boscarino's (2016) model. The fact that the groups used certain hashtags, such as #NRA and #guncontrol, to reach users on the other side of the debate suggests a certain level of mutual awareness. However, the findings mostly point to the presence of two parallel conversations – one among gun control supporters and one among gun rights advocates – with little overlap. For instance, the content analysis revealed that the Brady campaign often blamed the NRA in its tweets. Rather than responding to those accusations, the NRA blamed another organization altogether (Bloomberg's Mayors Against Illegal Guns). Future work should engage in a deeper examination of groups' framing on social media, determining if and when the topics discussed by opposing groups converge.

Finally, this research offers some broad insights for those interested in studying online policy debates. First, interest groups likely accelerate the formation of online echo chambers on social media. Beyond their traditional recruitment and mobilization efforts, interest groups' consistent posting on sites such as Twitter and Facebook helps to keep policy debates alive and policy communities active, a function that may be especially important during lulls in issue salience. Additionally, through retweets and mentions of their supporters, interest groups engage in positive reinforcement that likely strengthens bonds within their respective political coalitions. During the time frame of the study, these functions were utilized more by the Brady campaign than the NRA, a finding consistent with Schattschneider's (1960) notion of conflict expansion; given that the status quo policy generally favors gun rights, the Brady campaign likely perceived itself as disadvantaged, a factor that might have motivated the organization to make greater use of Twitter for public outreach. The role of interest groups should thus be given greater attention in research examining echo chambers, especially in issue areas with long-standing organizations on both sides. Second, understanding the process by which like-minded individuals group together online requires that researchers pay attention both to the interactions that occur online as well as those that

are avoided. Indeed, while interest groups invite some individuals into their online advocacy, they systematically ignore others. Research that focusses exclusively on networks of mentions and retweets, for instance, misses this second (and arguably equally important) facet of online group dynamics. Future work could apply this approach to the social media practices of elected officials and political candidates to further shed light on how political actors use online forums to shape political coalitions and exercise power.

Notes

1. In particular, they found that individuals debating the abortion issue used both neutral hashtags – which would be noticed by diverse users – and non-neutral hashtags (e.g. #pro-choice and #pro-life), often pairing opposing hashtags to draw the attention of opponents.
2. If a tweet mentioned a political actor, but did not characterize the actor as a hero, ally, villain, or opponent, the tweet was coded as zero on each of the character categories. Given that this research investigates how groups and individuals draw boundaries around their respective coalitions, actors represented in a neutral manner are less relevant than those that are portrayed positively or negatively.
3. Cohen's κ is a measurement of inter-coder reliability ranging from −1 to 1, which takes into account agreement occurring by chance. Landis and Koch (1977) characterize values between 0.41 and 0.60 as indicating moderate agreement, values between 0.61 and 0.80 as indicating substantial agreement, and values between 0.81 and 1 as near perfect.
4. Further, a search for the hashtag #gun on Twitter (conducted October 3, 2015) revealed that the hashtag is used in a neutral manner by media organizations and by hunters and sport shooters, among others.
5. A search of the hashtag #guncontrol on Twitter (conducted October 3, 2015) revealed that the hashtag is used by both supporters and opponents of gun control.
6. A Pearson's χ^2 test indicated that the difference in rates of retweeting between the two organizations was statistically significant ($\chi^2 = 391.9$, $p < 0.01$).
7. This was determined based on the content of the tweet, on the organization's commentary added onto the retweet, or on the known reputation of the original user. Given the straightforward nature of the coding, only one coder was used for this portion of the content analysis.
8. All of the 54 neutral retweets were from the Brady campaign.
9. A Pearson's χ^2 test indicated that the difference in use of mentions between the two organizations was statistically significant ($\chi^2 = 36.11$, $p < 0.01$).
10. To further investigate the role of mentions in producing homophily, it would be instructive to investigate the political views of users categorized as neutral.
11. This finding is consistent across the time frame; in other words, there were no sudden increases in blame-related mentions in response to events such as mass shootings.
12. The reference category for organization is the Brady campaign, while the reference category for year is 2009.
13. The avoidance of cross-cutting interactions may be even more pronounced in other social media, such as Facebook, in which users often limit their communications to their personal networks.

References

Adamic, L. and Glance, N. (2005), "The political blogosphere and the 2004 US election: divided they blog", *Proceedings of the 3rd International Workshop on Link Discovery, ACM, New York, NY*, pp. 36-43.

Arnold, R.D. (1990), *The Logic of Congressional Action*, Yale University Press, New Haven, CT.

Barberá, P. (2015), "How social media reduces mass political polarization. Evidence from Germany, Spain, and the US", paper presented at the American Political Science Association annual meeting, San Francisco, CA, available at: http://pablobarbera.com/static/barbera-polarization-social-media.pdf (accessed October 23, 2015).

Baumgartner, F.R. and Jones, B.D. (1993), *Agendas and Instability in American Politics*, University of Chicago Press, Chicago, IL.

Benford, R.D. and Snow, D.A. (2000), "Framing processes and social movements: an overview and assessment", *Annual Review of Sociology*, Vol. 26, pp. 611-639.

Benjamin, Y. (2010), "The secret Twitter war for America's independents: #tcot vs #p2", SFGate, July 27, available at: http://blog.sfgate.com/ybenjamin/2010/ 07/27/the-secret-twitter-war-for-americas-independents-tcot-vs-p2/ (accessed October 26, 2015).

Benkler, Y. (2006), *The Wealth of Networks: How Social Production Transforms Markets and Freedom*, Yale University Press, New Haven, CT.

Bishop, B. (2009), *The Big Sort: Why the Clustering of Like-Minded America is Tearing Us Apart*, Mariner Books, New York, NY.

Boscarino, J.E. (2016), "Setting the record straight: frame contestation as an advocacy tactic", *Policy Studies Journal*, Vol. 44 No. 3, pp. 280-308.

Boutet, A., Kim, H. and Yoneki, E. (2013), "What's in Twitter, I know what parties are popular and who you are supporting now!", *Social Network Analysis and Mining*, Vol. 3 No. 4, pp. 1379-1391.

Boutin, P. (2011), "A better way to search Twitter", *The New York Times*, July 26, available at: http://gadgetwise.blogs.nytimes.com/2011/07/26/a-better-way-to-search-twitter/ (accessed October 23, 2015).

boyd, d., Golder, S. and Lotan, G. (2010), "Tweet, tweet, retweet: conversational aspects of retweeting on Twitter", *Proceedings of the 43rd Hawaii International Conference on System Sciences, Kauai, HI*.

Bruns, A. and Moe, H. (2014), "Structural layers of communication on Twitter", in Weller, K., Bruns, A., Burgess, J., Mahrt, M. and Puschmann, C. (Eds), *Twitter and Society*, Peter Lang, New York, NY, pp. 15-28.

Callahan, K. and Schnell, F. (2001), "Assessing the democratic debate: how the news media frame elite policy discourse", *Political Communication*, Vol. 18 No. 2, pp. 183-212.

Chadwick, A. (2007), "Digital network repertoires and organizational hybridity", *Political Communication*, Vol. 24 No. 3, pp. 283-301.

Choi, M., Sang, Y. and Woo Park, H. (2014), "Exploring political discussions by Korean Twitter users: a look at opinion leadership and homophily phenomenon", *Aslib Journal of Information Management*, Vol. 66 No. 6, pp. 582-602.

Chong, D. and Druckman, J.N. (2013), "Counterframing effects", *The Journal of Politics*, Vol. 75 No. 1, pp. 1-16.

Colleoni, E., Rozza, A. and Arvidsson, A. (2014), "Echo chamber or public sphere? Predicting political orientation and measuring political homophily in Twitter using big data", *Journal of Communication*, Vol. 63 No. 2, pp. 317-332.

Conover, M., Ratkiewicz, J., Francisco, M., Gonçalves, B., Menczer, F. and Flammini, A. (2011), "Political polarization on Twitter", *Proceedings of the Fifth International AAAI Conference on Weblogs and Social Media*, *AAAI Press*, *Menlo Park, CA*, pp. 89-96.

Farrell, H. (2012), "The consequences of the internet for politics", *Annual Review of Political Science*, Vol. 15, pp. 35-52.

Feller, A., Kuhnert, M., Sprenger, T.O. and Welpe, I.M. (2011), "Divided they tweet: the network structure of political microbloggers and discussion topics", *Proceedings of the 5th International AAAI Conference on Weblogs and Social Media*, *AAAI.org, Menlow Park, CA*, pp. 474-477.

Goss, K.A. (2006), *Disarmed: The Missing Movement for Gun Control in America*, Princeton University Press, Princeton, NJ.

Gray, J.H. and Densten, I.L. (1998), "Integrating quantitative and qualitative analysis using latent and manifest variables", *Quality and Quantity*, Vol. 32 No. 4, pp. 419-431.

Gruzd, A. and Roy, J. (2014), "Investigating political polarization on Twitter: a Canadian perspective", *Policy and Internet*, Vol. 6 No. 1, pp. 28-45.

Guggenheim, L., Jang, S.M., Bae, S.Y. and Neuman, W.R. (2015), "The dynamics of issue frame competition in traditional and social media", *The Annals of the American Academy of Political and Social Science*, Vol. 659 No. 1, pp. 207-224.

Haider-Markel, D. and Joslyn, M.R. (2001), "Gun policy, opinion, tragedy, and blame attribution: the conditional influence of issue frames", *The Journal of Politic*, Vol. 63 No. 2, pp. 520-543.

Hargittai, E., Gallo, J. and Kane, M. (2008), "Cross-ideological discussions among conservative and liberal bloggers", *Public Choice*, Vol. 134 Nos 1-2, pp. 67-86.

Himelboim, I., McCreery, S. and Smith, M. (2013), "Birds of a feather tweet together: integrating network and content analyses to examine cross-ideology exposure on Twitter", *Journal of Computer-Mediated Communication*, Vol. 18 No. 2, pp. 40-60.

Huckfeldt, R., Mendez, J.M. and Osborn, T. (2004), "Disagreement, ambivalence, and engagement: the political consequences of heterogeneous networks", *Political Psychology*, Vol. 25 No. 1, pp. 65-95.

Jacobson, G.C. (2003), "Partisan polarization in presidential support: the electoral connection", *Congress and the Presidency*, Vol. 30 No. 1, pp. 1-36.

Jones, M.D., Shanahan, E.A. and McBeth, M.K. (Eds), (2014), *The Science of Stories: Applicatins of the Narrative Policy Framework in Public Policy Analysis*, Palgrave Macmillon, New York, NY.

Kelly, J., Fisher, D. and Smith, M. (2005), "Debate, division, and diversity: political discourse networks in USENET newsgroups", paper presented at the Stanford Online Deliberation Conference DIAC, Stanford, CA.

Krieck, M., Dreesman, J., Otrusina, L. and Denecke, K. (2011), "A new age in public health: identifying disease outbreaks by analyzing tweets", *Proceedings of Health Web Science Workshop*, *ACM Web Science Conference, Koblenz, June 14-17*.

Knight, G. and Greenberg, J. (2011), "Talk of the enemy: adversarial framing and climate change discourse", *Social Movement Studies*, Vol. 10 No. 4, pp. 323-340.

Kollman, K. (1998), *Outside Lobbying: Public Opinion and Interest Group Strategies*, Princeton University Press, Princeton, NJ.

Kwak, N., Williams, A., Wang, X. and Lee, H. (2005), "Talking politics and engaging politics: an examination of the interactive relationships between structural features of political talk and discussion engagement", *Communication Research*, Vol. 31 No. 1, pp. 87-111.

Landis, J.R. and Koch, G.G. (1977), "The measurement of observer agreement for categorical data", *Biometrics*, Vol. 33 No. 1, pp. 159-74.

Lawrence, E., Sides, J. and Farrell, H. (2010), "Self-segregation or deliberation? Blog readership, participation, and polarization in American politics", *Perspectives on Politics*, Vol. 8 No. 1, pp. 141-157.

Lindgren, S. and Lundström, R. (2011), "Pirate culture and hacktivist mobilization: the cultural and social protocols of #wikileaks on Twitter", *New Media and Society*, Vol. 13 No. 6, pp. 999-1018.

McBeth, M.K., Shanahan, E.A. and Jones, M.D. (2005), "The science of storytelling: measuring policy beliefs in greater yellowstone", *Society and Natural Resources*, Vol. 18, pp. 413-429.

McCarty, N., Poole, K.T. and Rosenthal, H. (2006), *Polarized America: The Dance of Ideology and Unequal Riches*, The MIT Press, Cambridge, MA.

McPherson, M., Smith-Lovin, L. and Cook, J.M. (2001), "Birds of a feather: homophily in social networks", *Annual Review of Sociology*, Vol. 27, pp. 415-444.

Marwick, A.E. and boyd, d. (2011), "I tweet honestly, I tweet passionately: Twitter users, context collapse, and the imagined audience", *New Media & Society*, Vol. 13 No. 1, pp. 96-113.

Merry, M.K. (2012), "Environmental groups' communication strategies in multiple media", *Environmental Politics*, Vol. 21 No. 1, pp. 49-69.

Meyer, D.S. and Staggenborg, S. (1996), "Movements, countermovements, and the structure of political opportunity", *American Journal of Sociology*, Vol. 101 No. 6, pp. 1628-1660.

Mutz, D.C. (2002), "Cross-cutting social networks: testing democratic theory in practice", *American Political Science Review*, Vol. 96 No. 1, pp. 111-126.

O'Hara, K. and Stevens, D. (2015), "Echo chambers and online radicalism: assessing the internet's complicity in violent extremism", *Policy and Internet*, Vol. 7 No. 4, pp. 401-422.

O'Neil, K.L. (2007), "Armed citizens and the stories they tell", *Men and Masculinities*, Vol. 9 No. 4, pp. 457-475.

Patrick, B.P. (2002), *The National Rifle Association and the Media: The Motivational Force of Negative Coverage*, Peter Lang, New York, NY.

Schattschneider, E.E. (1960), *The Semisovereign People: A Realist's View of Democracy in America*, Holt, Rinehart, and Winston, New York, NY.

Shirky, C. (2008), *Here Comes Everybody: The Power of Organizing without Organizations*, Penguin Press, New York, NY.

Spitzer, R.J. (2008), *The Politics of Gun Control*, CQ Press, New York, NY.

Stone, D.A. (1989), "Causal stories and the formation of policy agendas", *Political Science Quarterly*, Vol. 104 No. 2, pp. 281-300.

Stone, D.A. (2002), *Policy Paradox: The Art of Political Decision Making*, rev. ed., W.W. Norton and Company, New York, NY.

Sunstein, C.R. (2001), *Republic.com*, Princeton University Press, Princeton, NJ.

Sunstein, C.R. (2007), *Republic.com 2.0*, Princeton University Press, Princeton, NJ.

Thoring, A. (2011), "Corporate tweeting: analysing the use of Twitter as a marketing tool by UK trade publishers", *Publishing Research Quarterly*, Vol. 27 No. 2, pp. 141-158.

Tredinnick, L. (2006), "Web 2.0 and business: a pointer to the intranets of the future", *Business Information Review*, Vol. 23 No. 4, pp. 228-234.

Warner, B.R. (2010), "Segmenting the electorate: the effects of exposure to political extremism online", *Communication Studies*, Vol. 61 No. 4, pp. 430-444.

Wilson, H.L. (2014), *Guns, Gun Control, and Elections*, Rowman and Littlefield Publishers Inc., New York, NY.

Wojcieszak, M. (2010), "'Don't talk to me': effects of ideologically homogeneous online groups and politically dissimilar offline ties on extremism", *New Media and Society*, Vol. 12 No. 4, pp. 637-655.

Yardi, S. and boyd, d. (2010), "Dynamic debates: an analysis of group polarization over time on Twitter", *Bulletin of Science, Technology and Society*, Vol. 30 No. 5, pp. 316-327.

Corresponding author
Melissa Merry can be contacted at: melissa.merry@louisville.edu