Homophily in the Guise of Cross-Linking: Political Blogs and Content

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Abstract
This study examines the behavior of influential political blogs (conservative and liberal) in reference to external viral content during March 2007 and June 2009. We analyze homophily and cross-ideological (heterophily) practices. We propose a multi-dimensional model that employs both qualitative and quantitative methods for examining homophily behaviors by looking at three dimensions: blog-to-blog, blog-to-video, blog post-to-video. Findings show that while homophily patterns prevail, some limited occurrences of cross-ideological practices exist. The cross-linking practices may include deliberative motives, but in essence they are not created for the purposes of discourse. Instead, these cross-linking practices strengthen previously held political stances of the users who create them and negatively portray and reframe content of alternative views. This represents homophily in the guise of cross-linking.

Keywords: Political blogs, homophily, viral videos, influence, social networks, social media, information flows
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**Introduction**

Understanding information flows within social media platforms, as manifesting potentially influential behavioral practices of users, contributes to an ongoing debate about the role of Social Media in the political-information ecology. Central to this debate is the question of how the Internet and social networks affect politics, in general, and democracy, in particular. Scholars argue that the affordances of the Internet, act as a space that reinforces diversity, autonomy, provides alternatives and enhances deliberation and discursive practices (Benkler, 2006; Shaw & Benkler, 2012; Woodly, 2008). However, empirical studies have reported on social networks as inducing homophily, fragmentation, and polarization (Benkler, 2006; Sunstein, 2009). Additional research has demonstrated that linking among entities in social networks follows a power-law distribution, where a few elites receive the attention of many and thus have a disproportionate amount of influence (Adamic & Glance, 2005; Drezner & Farrell, 2008; Karpf, 2008; Nahon, Hemsley, Walker, & Hussain, 2011; Kevin Wallsten, 2011). Homophily, the tendency of people, who are similar, to associate with each other more frequently than they associate with others (Lazarsfeld & Merton, 1954; McPherson, Smith-Lovin, & Cook, 2001), has long been recognized as a factor in linking behavior. More recently, homophily has been shown to be statistically confounded with influence (Shalizi & Thomas, 2011), meaning statistics can not be used to differentiate between similar behavior due to homophilous linking or due to influence of actor A over B.
In this article, we contribute to this debate through an empirical analysis of linking and content practices among users between different social media platforms: political blogs and videos. We analyze homophily and cross-ideological (heterophily) practices between influential political blogs (conservative and liberal) and viral videos between March 2007 and June 2009. The resolution of standard instruments for studying homophily (e.g. link analysis), does not provide a sufficiently nuanced understanding of behavior at a granular level. Therefore, we propose a refined model that employs quantitative and qualitative methods at three levels: blog-to-blog, blog-to-video, blog post-to-video.

Since Lazarsfeld and Merton coined the term homophily (1954), researchers have studied homophily in social networks extensively. Scholars that have attempted to quantitatively distinguish homophily from personal influence (Aral, Muchnik, & Sundararajan, 2009; Centola, González-Avella, Eguíluz, & San Miguel, 2007) have been rebuffed by prominent statisticians who show that the two processes are generically confounded (Shalizi & Thomas, 2011). Thus, a complex relationship exists between homophily and influence: are people acting in similar ways because one has influenced the other or because they are similar? Homophilous links arise because people interact with similar people. As they interact over time they co-influence each other and become more similar. Thus, over time, homophily changes and influences the structure of the group, a process we call social influence (Centola et al., 2007).

Homophily is fundamentally a mechanism of selection, but at the same time it is also a mechanism of influence (even if latent) at the individual and group levels. It is induced by social structure and, in turn, influences those structures in what Centola et al. (2007) refer to as a co-evolutionary model. Understanding practices of homophily, manifested through information
flows in social networks, will allow us to understand the influence they have on user and group behavior.

Our paper contributes significantly to the existing body of literature of political social networks in the following ways. First, most of the existing literature focuses on blog-to-blog analysis. We go beyond this and examine patterns of blog-to-content behavior, specifically viral videos. Second, it combines both quantitative and qualitative methods in order to gain an understanding of political linking behavior at the macro and micro levels. Finally, our paper suggests a more refined way of measuring homophily and cross-ideological linking behavior by looking at three dimensions of these concepts (blog-to-blog, blog-to-video, and blog-post-to-video) instead of focusing only on one dimension, the blog dimension.

**Blogs and Videos in Political Social Networks**

**Information Flows Between Blogs and Viral Videos**

As the use of information technology platforms for political purposes has grown in recent years, blogs and videos have served as an important information outlet (Smith, 2009). Blogs and video platforms, such as YouTube, have become vehicles for mobilization by political elites and users (Castells, 2009). As user-generated content and dissemination has increased, the number of studies investigating questions of influence, the credibility of viral content and the impact of these platforms on political processes increased as well (Burgess, Green, & Jenkins, 2011; Nahon & Hemsley, 2013; Shaw & Benkler, 2012).
A special focus has been given in the literature to viral videos. For the purpose of this work, we define *viral videos* as videos that many people forward over a short period of time, within and beyond their own social networks, that spread to different, often distant networks, resulting in a sharp acceleration in the number of people who were exposed to the message (Hemsley & Robert M. Mason, 2012; Nahon & Hemsley, 2013). The assumption behind these studies has been that due to the large and fast exposure, viral videos were more influential than non-viral videos. As such, authors have examined different aspects of the influence of viral videos during election campaigns. For example, Ancu (2010) argued that although viewers assigned low credibility scores to both viral videos and their producers, the videos still influenced their attitudes toward the candidates. Also, English et al. (2011) showed that users who watched viral political videos changed their opinions about political candidates. Finally, Klotz (2010) found that videos produced by ordinary citizens were generally undistinguished and overshadowed by videos created by institutional participants.

Parallel to the literature on political viral videos there is a body of work that focuses on the influence of political blog. For example, Drezner and Farrel (2008) claim that top blogs influence political elites through mainstream media elites who read them and act as network gatekeepers (Barzilai-Nahon, 2008). Additionally, scholars investigating the structuring of power and influence within the blogosphere, find that blogs have an impact on agenda setting and political participation (K. Wallsten, 2010; Woodly, 2008) and shape political learning and deliberation (Lawrence, Sides, & Farrell, 2010; Leccese, 2009). Finally, empirical evidence of a power-law distribution of linking patterns in the blogosphere (Adamic & Glance, 2005; Drezner & Farrell, 2008; Karpf, 2008; Nahon et al., 2011) has been used to argue that the Internet may not manifest
a pluralized space, but rather reinforce pre-existing patterns of influence and participation (Hindman, 2008).

Still, literature that studies the linking practices of blogs to viral videos is scarce. Nahon et al. (2011) showed that a few elite blogs tend to drive the virality process, and in Wallsten’s (2010) examination of will.i.am’s viral video “Yes We Can,” he argued that bloggers and members of the Obama campaign were significant factors in driving viewership to the video. In a later study, Wallsten (2011) investigated the stance that political bloggers have toward videos and found that they “engage in the type of ideologically-motivated filtering of online videos that presents readers with a decidedly one-sided and negative view of those who do not share their political beliefs” (2011, p. 88).

**Homophily in Social Networks**

Social science has long been interested in the topic of homophily in social networks (Goodreau, Kitts, & Morris, 2009; Louch, 2000; McPherson et al., 2001). The idea is that a set of homogeneous people along lines of socio-demographic and interpersonal characteristics such as race, marriage, friendship, gender, religion, age, class and education are more likely to form relationships with each other than heterogeneous people. Most of the literature about relationships in online platforms have exhibited similar trends of homophily (Bisgin, Agarwal, & Xu, 2010; Lauw, Shafer, Agrawal, & Ntoulas, 2010). Top political blogs have consistently shown patterns of political homophily in their linking behavior (Adamic & Glance, 2005; Hargittai, Gallo, & Kane, 2008; Perlmutter, 2008; K. Wallsten, 2010; Kevin Wallsten, 2011).
Additionally, blog readers display a tendency to read blogs aligned with their ideological and partisan preferences (Lawrence et al., 2010).

Of particular interest is the study of Hargittai et al. (2008), who examined the nature of the links within and between ideological (liberal and conservative) blogosphere clusters. They find that the majority of links are within an ideological cluster of blogs, and therefore exhibit homophily. Cross-linking constituted a small portion of the links with 16% liberals cross-linking and only 12% of conservatives cross-linking. Through content analysis they found 26% of conservative cross-links could be characterized as deliberation, while for liberals it was only 21% of the time.

To sum up the literature we surveyed, videos and blogs are influential in the political realm. Patterns of user behavior in the blogosphere and video platforms, such as homophily, reflect clustering behaviors in social media, where groups of users behave similarly. Clustering behaviors impact information flows and society and are therefore essential to the understanding of dynamics of influence in social media. A limitation in the existing literature, however, is that there is little research on the concepts of homophily and cross-linking of blogs to external content: blog-to-video. Furthermore, to be able to investigate homophily and cross-linking in an in-depth manner, as Hargittai et al. suggests, requires that we develop a methodology capable of analyzing more than one dimension. We argue that homophily and cross-linking in the context of blogs linking to videos, should be studied by analyzing three dimensions: Level 1 - Homophily and cross-linking of blogs, which occurs when two blogs of a similar (homophily) or dissimilar (cross-linking) inclination link to the same video; Level 2 - Homophily and cross-linking of videos, which occurs when a video of a certain political inclination receives links from a blog of a similar (homophily) or dissimilar (cross-linking) inclination; and Level 3 - Homophily and
cross-linking of the blog posts to videos, which occurs when a post of a similar (homophily) or dissimilar (cross-linking) inclination links to video. This allows us to cover all the aspects of homophily and cross-linking.

**Research Questions and Methodology**

In this study we examine how political blogs link to viral videos between March 2007 and June 2009 and related to the 2008 U.S. Presidential Election. We address the following research questions:

1. Do political blogs of the same political inclination tend to link to the same videos?
2. If they do, to what extent?
3. Additionally, in cases where cross-ideological linking occurs, what is the nature of that linking?

The nature of these questions calls for a mixed methods approach. Each question maps onto a different level of analysis of homophily and heterophily (cross-linking). We envision our methodology as an examination that initially takes a broader approach and progressively becomes deeper and more granular. Note that our first question is the most general and requires an overview perspective of the linking practices of blogs to content. To answer this question, we employ quantitative techniques from social network analysis (SNA): a network regression model (Dekker, Krackhardt, & Snijders, 2007; Krackhardt, 1988). We expect to find that bloggers of the same ideological stance tend to link to the same content, which would be a pattern of homophily in our blog-to-blog level of analysis. We describe this model in Section 3.2 after outlining the other two levels of analysis and our method of collecting data.
To answer our second research question, we report and interpret the cross-linking practices we observe via descriptive statistics. While the SNA analysis gives us the behavioral tendencies of blogs, the descriptive statistics illuminate interesting deviations. These cases of deviation from the general tendency will be cases of cross-linking across ideological stances from blogs (of one stance) to videos (of the other stance). This is our blog-to-video level analysis.

Finally, we examine the nature of these cross-links deeply with a qualitative content analysis of the videos and blog posts (those linking to videos). Our coding schema is simple and aimed specifically at answering our third research question. Two judges coded the 2 factors in table 1 and Cohen's Kappa was used to measure coding agreement (see table 1). Recent studies consider a Kappa score higher than 0.65 to be acceptable (Moore & Benbasat, 1991).

Table 1

<table>
<thead>
<tr>
<th>Video Coding</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable</strong></td>
<td><strong>Values</strong></td>
</tr>
<tr>
<td>VIDEOSTANCE</td>
<td>0=unidentified/unknown, 1=progressive, 2=conservative</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Blog Post Coding</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable</strong></td>
<td><strong>Values</strong></td>
</tr>
<tr>
<td>POST_MSG</td>
<td>0=unidentified, 1=neutral, 2=against 3-for</td>
</tr>
</tbody>
</table>
Data

To address our research questions, we created a dataset that is an amalgamation of two different datasets: 1) a list of viral video data related to the 2008 presidential election with their daily views; 2) data about the links from top political blogs to our viral videos. Each is described below.

Viral Videos Data

We drew our list of viral videos from Viral Video Chart, a service that provided daily lists of viral videos in multiple categories throughout the U.S. 2008 election. The videos in our dataset spanned from March 2007 to June 2009, covering the primaries, Election Day and Obama’s inauguration. We started with the top 100 videos from each of the following categories: political, election and general. After removing duplicates from the combined list, four researchers coded the videos as related to the election or not. Our approach was conservative in that unanimous agreement among coders was required for the video to be included. The result was 120 unique videos out of 300 possible, all of which were on YouTube. Using TubeMogul as the data provider, we were able to get sufficient historic daily view counts for 83 of the 120 videos.

Note that we explored other services, such as break.com, collegehumor.com, failblog.com, and funnyordie.com, before settling on Viral Video Chart as the most comprehensive for election related videos. And while we checked with TubeKit, TubeMogul provided better historical data.

Top Political Blogs Linking to Viral Videos

Our set of top political (25 conservative and 25 liberal) blogs was drawn from David Karpf’s Blogosphere Authority Index (BAI) (Karpf, 2008). Many other ranking systems rely on a single
distinct measure of influence, such as network centrality, in/out linking measures, site views, daily readership, and contributors. The BAI has an advantage in that it synthesizes these different measures into one authority index. It also has the advantage of tracking changes in blog status over time, allowing us to retroactively determine the top blogs during the 2008 election for our study.

Using automated scripts, we gathered the data linking top political blog posts to our viral videos from Google Blog Search, which returned a more comprehensive sample than Technorati¹.

**Quantitative Model**

To address the first question, “Do political blogs of the same political inclination tend to link to the same content?”, we used a network regression model (Dekker et al., 2007; Krackhardt, 1988). This type of regression works on matrix data, where the dependent and independent variables are in matrix form. This allows us to answer our questions in terms of how the values in one matrix (our independent variables) might affect the number of times co-linking occurs between blogs and our viral videos.

We illustrate the model as follows, and provide details about each variable below:

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1 Note that in some cases videos may have multiple URLs. For our search we selected the URL related to the video with highest number of views, which was generally several orders of magnitude higher than the next highest URL’s view count.
Blog Co-Linking Matrix (BLM): Our dependent variable reflects cases when two blogs link to the same video. Note that we start with a matrix of 50 rows (blogs) and 83 columns (videos). Each $ij$ cell in the matrix represents the number of times blog $i$ links to video $j$. We transform this matrix by multiplying the transpose of the matrix by itself. The result is a 28-by-28, blog-by-blog matrix (we drop blogs and videos not linked) where each cell in this new matrix represents the number of times two blogs link to the same video.

Political Leaning Matrix (PM): In this matrix we operationalize ideological homophily among blogs. A cell has a value of one if two blogs share the same political inclination; otherwise the value is zero. Political inclination is one of the blog attributes available in Dave Karpf’s Blogosphere Authority Index (BAI) (Karpf, 2008).

Bandwagon Matrix (BM): The cells in this matrix capture the combined number of views for videos that two blogs linked to. We include this variable as a control variable for a bandwagon effect. If this variable is significant it suggests that the more popular a video gets, the more likely we are to see a positive feedback mechanism where other blogs link to the video simply because everyone else is.

Findings

Before discussing the findings for each level of analysis, we offer descriptive frequencies from our data (see Table 2). Similar to other studies (Klotz, 2010; Shaw & Benkler, 2012; Smith, 2009), we find that liberals generated higher volumes of content than conservatives during the
election: the frequency of blogs, videos and posts\(^2\) are all higher for liberals. Interestingly, 44% of the top political blogs did not link to any of the viral videos in our collection, and 24% (20 videos) of all viral videos were not linked to from any top blog, conservative or liberal.

Table 2

<table>
<thead>
<tr>
<th>BLOGS (linking to videos)</th>
<th>Value</th>
<th>All</th>
<th>Lib</th>
<th>Con</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total blogs</td>
<td>50</td>
<td>100%</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Blogs that did not link to videos</td>
<td>22</td>
<td>44%</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>Liberal blogs linking to videos</td>
<td>18</td>
<td>36%</td>
<td>72%</td>
<td>n/a</td>
</tr>
<tr>
<td>Conservative blogs linking to videos</td>
<td>10</td>
<td>20%</td>
<td>n/a</td>
<td>40%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VIDEOS (linked from blogs)</th>
<th>Value</th>
<th>All</th>
<th>% of linked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total videos</td>
<td>83</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Videos receiving no links</td>
<td>20</td>
<td>24%</td>
<td>n/a</td>
</tr>
<tr>
<td>Total videos that received links</td>
<td>63</td>
<td>76%</td>
<td>100%</td>
</tr>
<tr>
<td>Total videos that liberals linked to</td>
<td>60</td>
<td>72%</td>
<td>95%</td>
</tr>
<tr>
<td>Total videos that conservatives linked to</td>
<td>18</td>
<td>22%</td>
<td>29%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coded Video Stance</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Video message is liberal</td>
<td>45</td>
<td>54%</td>
<td>71%</td>
</tr>
<tr>
<td>Video message is conservative</td>
<td>15</td>
<td>18%</td>
<td>24%</td>
</tr>
<tr>
<td>Video message is unknown</td>
<td>3</td>
<td>4%</td>
<td>5%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>POSTS of BLOGS (LINKS to Videos)</th>
<th>Value</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total links to videos</td>
<td>302</td>
<td>100%</td>
</tr>
<tr>
<td>Links from liberal blogs</td>
<td>251</td>
<td>83%</td>
</tr>
<tr>
<td>Links from conservative blogs</td>
<td>51</td>
<td>17%</td>
</tr>
</tbody>
</table>

Level 1: Blog Homophily and Cross-Linking

As discussed above, at the blog-to-blog level of analysis we employ a simple hypothesis test to determine if a pattern of homophily exists wherein blogs tend to co-link to the same content. The results of the network regression model are provided in Table 3. Note that the model explains

\(^2\) Note that blogs often link to a video multiple times.
79% of the variance, \((R^2 = 0.79)\), and is statistically significant. Moreover, both our control variable for the bandwagon effect and our independent variable, testing homophily, are significant.

Table 3

The Regression Model

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.21099</td>
</tr>
<tr>
<td>Political leaning</td>
<td>0.63425**</td>
</tr>
<tr>
<td>Bandwagon effect</td>
<td>0.00756***</td>
</tr>
</tbody>
</table>

* sig < .05, ** sig < .01, *** sig < .001

Model Performance

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Residual standard error</td>
<td>3.475, df=1221</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.7867</td>
</tr>
<tr>
<td>F-statistic</td>
<td>1502, df=3,1221, p-value&gt;.001</td>
</tr>
</tbody>
</table>

Given these results, we find support for the claim that blogs of similar political inclination will tend to link to the same videos. Interpreting the coefficient suggests that the value of a link (the number of times those blogs linked to the same video) will be higher by 0.63 for blogs of the same leaning than for blogs of opposing ideology.

Since our control variable is significant, the model also suggests that a bandwagon effect exists. This reflects a relationship between the popularity of a video and the tendency of other blogs in our set to link to that video as well. Interpreting the coefficient (0.00756) means that an increase of 1,322,751 views results in an additional link. While somewhat unusual, some political video are viewed more than one million times. For example, “Yes We Can,” a viral video created by the singer will.i.am, attracted around 21 million views and was the most linked to video in our set.
To illustrate our regression findings we provide a visualization of our blog-by-blog network (see Figure 2). Each blog is represented as a node and each line represents cases where two blogs link to the same video. The plotting algorithm situates the nodes so that blogs who co-link with other blogs the most are more central in the graph (Huffington Post and Daily Kos). It also pushes nodes apart if they never co-link (Shakespeare’s Sister never co-links with Five Thirty Eight and are situated on opposite sides of Huffington Post). Since each link represents a case where two blogs linked to the same video, this layout pulls nodes that have similar content choices closer together and pushes them apart if they have dissimilar content choices.

Figure 2

Blog-by-blog Content Co-linking Network

The figure emphasizes three things: First, we can see again that there are more liberal blogs (solid blue) and that they are much more active than conservative blogs (red open rings). Second,
similar to findings by other researchers (Lawrence et al., 2010; Rainie, & Wellman, 2012), it shows that liberals tend to be more focused around the same content. This supports the regression findings discussed above. Third, it illuminates a new group in the liberal blogs, constituted from two blogs, Huffington Post and Daily Kos. As noted by other authors (Karpf, 2008; Nahon & Hemsley, 2013), these two blogs are far more prominent and require further attention. Huffington Post and Daily Kos linked to 70% and 58%, respectively, of our viral videos (noted by their size in the graph) as opposed to other top political blogs that linked to only 13% of viral videos on average. We refer to these blogs as the elite of the elite. Nahon et al. (2011) show how these blogs tended to link to viral videos before other blogs, and before the videos reached their peak of attention. Thus, they not only attract a lot of traffic: other blogs tend to follow their content choices, which give these two blogs an influential agenda-setting power.

While patterns of homophily are affirmed in the regression model, the descriptive statistics in Table 4 surprisingly shows that more blogs actually engage in cross-linking behavior (82%). Looking at this carefully, we see that in order to be considered a cross-linking blog at the descriptive level, a blog need only link to one viral video to which a blog of opposing ideology also linked. Since our regression reports on patterns of behavior on average, it more accurately reflects the general behavior of blogs, whereas the descriptive statistics reveal one-off behavior. Note that our control variable shows that highly popular videos are more likely to receive links from blogs – regardless of political inclination – than less popular videos. In other words, some of the cross-linking can be explained by the fact that a few videos attracted links from a large number of blogs. But the linking behavior of blogs, in general, is one of homophily.
Table 4

Blog Homophily and Cross-Linking Behaviors

<table>
<thead>
<tr>
<th>BLOGS Homophily and Cross-Linking Behaviors</th>
<th>Value</th>
<th>% of linked blogs</th>
<th>% of L Blogs</th>
<th>% of C Blogs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homophily of Blogs (level 1) – Blogs that did not engage in cross linking behavior with other blogs</td>
<td>5</td>
<td>17%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>⏯️ ⏯️ ⏯️ Liberal blogs that co-linked to liberal blogs only</td>
<td>4</td>
<td>8%</td>
<td>22%</td>
<td></td>
</tr>
<tr>
<td>⏯️ ⏯️ ⏯️ Conservative blogs that co-linked to conservative blogs only</td>
<td>1</td>
<td>2%</td>
<td></td>
<td>10%</td>
</tr>
<tr>
<td>Cross-linking of Blogs (level 1) – Blogs that are engaged in cross-linking behavior with other blogs</td>
<td>23</td>
<td>82%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>⏯️ ⏯️ ⏯️ Liberal blogs that engaged in cross-linking behavior</td>
<td>14</td>
<td>28%</td>
<td>78%</td>
<td></td>
</tr>
<tr>
<td>⏯️ ⏯️ ⏯️ Conservative blogs that engaged in cross-linking behavior</td>
<td>9</td>
<td>18%</td>
<td></td>
<td>90%</td>
</tr>
</tbody>
</table>

Level 2: Video Homophily and Cross-Linking

In the previous section we reported on the blog-to-blog level of analysis, the most macro level analysis among the three levels of homophily/cross-linking. The second level of analysis, the video level, is more granular in that we are looking at the way in which a video of a certain political inclination receives links from a blog of a similar (homophily) or dissimilar (cross-linking) inclination. To identify patterns of homophily/cross-linking of blogs to videos of similar inclination, we first coded the videos according to their political inclination (see table 1 for the coding scheme), and then looked at the patterns of linkings (see Table 5).
A few things are worth noting in Table 5. Over all, 63% of the videos exhibited homophily with blogs of a similar inclination, and only 37% of the videos exhibited heterophiliy behavior with blogs of dissimilar inclination. There is a stronger homophily of liberal content than conservative, as evidenced by the fact that 82% of liberal videos were linked from blogs of the same ideology. This is in contrast to the conservative videos, where 80% received links from liberal blogs. In Figure 3, we illustrate this with three vertical sets of nodes: liberal blogs on the left, videos in the middle and conservative blogs on the right. From the graphic we can see that only 15 videos

\[3\] Coding of videos was done by content analysis
were linked from both liberal and conservative blogs. In the next section we examine these 15 heterophilous videos at the post level analysis (level 3) by using content analysis.

Figure 3: Videos homophily
Level 3: Post Homophily and Cross-Linking

The blog-post level analysis (level 3) refers to the deepest and most granular level of homophily and cross-linking analysis. Here we look at cases in which a blog post from a blog of a given political ideology linked to a video with the same political message (homophily) or a video with a dissimilar political message (cross-linking). When there is cross-linking we perform an interpretive analysis on the blog post’s content. This is critical for our analysis for two reasons: First, blogs may not always display consistent linking behavior among their posts (e.g. Huffington Post has multiple authors). Thus, coding posts gives us a more accurate view of linking practices than at the blog level. Second, by reading all of the posts, we gain a more nuanced understanding of the practices of linking. Through this level of analysis we show that homophily are dominant: 68% of all posts linked to video (content) that was similar to their political inclination, while only 21% of posts were cross-linking (see Table 6).

Table 6

<table>
<thead>
<tr>
<th>Posts of Blogs (linking to Videos)</th>
<th>Value</th>
<th>All</th>
<th>% of L</th>
<th>% of C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homophily Posts (level 3) – blog post from one inclination linking to a video of a similar inclination</td>
<td>206</td>
<td>68%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----- Liberal blog post linking to liberal videos</td>
<td>178</td>
<td>59%</td>
<td>71%</td>
<td></td>
</tr>
<tr>
<td>----- Liberal blog post linking to liberal videos</td>
<td>28</td>
<td>9%</td>
<td>55%</td>
<td></td>
</tr>
<tr>
<td>Cross-linking Posts (level 3) – videos from one inclination linking to a blog post from another inclination</td>
<td>62</td>
<td>21%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----- Liberal blog post linking to a conservative video</td>
<td>44</td>
<td>15%</td>
<td>18%</td>
<td></td>
</tr>
<tr>
<td>----- Conservative blog post linking a liberal video</td>
<td>18</td>
<td>6%</td>
<td>35%</td>
<td></td>
</tr>
</tbody>
</table>
Of primary interest to us are the 21% of posts where both conservative and liberal blogs link to the same video (62 blog posts linking to 15 videos – see figure 4). Some of these cross-content referral are deliberative, but our content analysis indicates that even in these cases the deliberation is biased towards the ideology of the post, and refers to alternatives negatively. In fact, as we explain below, these occurrences of cross-linking are essentially a replication of homophily patterns at higher levels, because bloggers tend to link to content whose meaning is flexible enough to be co-opted for their own purposes. Figure 4 reveals that the majority of links came from liberals, even in cases where a video was created by conservatives. For example, the video “Celeb,” whose message was coded as conservative, was linked to more frequently by liberals.

Figure 4
Cross-Linked Posts to Videos
In the text examples that follow we show that bloggers posted links to videos of dissimilar inclination in cases where they wanted to either strengthen their stance or attack the other side.

Table 7
Content Analysis of Cross-Linking Posts to Videos

<table>
<thead>
<tr>
<th>Liberal blog post’s attitude toward message of video</th>
<th>Video Message Frequency / Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unknown %</td>
<td>Liberal %</td>
</tr>
<tr>
<td>Unidentified</td>
<td>7%</td>
</tr>
<tr>
<td>Neutral</td>
<td>0%</td>
</tr>
<tr>
<td>Negative</td>
<td>1%</td>
</tr>
<tr>
<td>Positive</td>
<td>5%</td>
</tr>
<tr>
<td>Conservative blog post’s attitude toward message of video</td>
<td>Unidentified</td>
</tr>
<tr>
<td>Neutral</td>
<td>0%</td>
</tr>
<tr>
<td>Negative</td>
<td>0%</td>
</tr>
<tr>
<td>Positive</td>
<td>6%</td>
</tr>
</tbody>
</table>

For example, the video “The One” contains a conservative message but received more links from liberals. Liberals linked to the video as evidence that conservative campaigns were resorting to negative attack ads, which is illustrated in the following quote from Daily Kos:

I think that McCain's "Celebrity" ad and the web follow-up "The One" are more damaging than many people seem to believe, but I also disagree with those who counsel that Obama should come out swinging against McCain. That is what they want him to do: if McCain drags him into the gutter, Obama sacrifices his advantages as a visionary and a uniter.
Obama must respond, but not with a similar attack. He should take offense in a particular way. McCain overstepped with "The One," and it should offend Obama in a way that most voters can understand and appreciate: it should offend him as a Christian.

(Daily Kos, 01/08/2008,

In fact, 32% of the posts linking to conservative videos were negative, whereas no post was positive with respect to conservative videos. It became apparent that all cross-linked videos were exploited with the intent to frame their message in support of their own inclination. Some posts created a meaningful discussion regarding the message of a video by challenging the facts presented in the video. For example, Daily Kos challenged a conservative video wherein democrats are shown calling for reduced regulation of Fannie Mae and Freddy Mac, and are blamed for the Wall Street meltdown:

Two questions:
1) In 2004, (the year referenced in the video), Republicans controlled both the House and the Senate, as well as the White House. If a majority of Republicans really wanted greater regulation over Fannie and Freddie, why couldn’t they push that legislation through?
2) If McCain was involved in this push for greater regulation, (uncharacteristic, given his ’deregulation’ mantra of the last 26 years), where is the video of McCain pushing for this legislation?
I understand that this video is from a house committee meeting, but Senate hearings are also on CSPAN. Where’s McCain?
(Daily Kos, 10/06/2008,
http://www.dailykos.com/storyonly/2008/10/6/174537/270/420/621986)

In cases where a post of one inclination linked to a video of the same inclination, it was mainly for purposes of support. In the brief example below, Talking Points Memo responds to Obama’s speech, “A More Perfect Union”:

When Obama came under fire for Jeremiah Wright, he did not lash out at the world, but rather responded a speech that has now become iconic, and will surely go down in history as one of the greatest speeches of our generation.
Only one video was of unidentified inclination. The video, “Vote Differently,” was created by Phillip de Vellis, who claimed he produced the video independently. This video had a message and audio-visual elements that could be easily mashed up and reframed in different ways in blog posts to fit the interest of both sides. For example, the message could fit the agenda of conservative voters against the Democratic Party, but it was also used by Obama supporters against Hillary Clinton, in the democratic primaries.

**Discussion: Multi-dimensional Homophilies and Cross-Linkings**

Our findings show that homophily is the normative pattern of behavior in the blogosphere, but more interestingly, what appears as heterophilous behavior is in fact acts a homophilous one. The cross-linking practices may have deliberative motives but are not created for the purposes of discourse. Instead, they strengthen previously held stances (e.g., stances that support the political inclination identified with the post) and a negative portrayal and reframing of alternative views. Our findings also show a stronger homophily at all three levels among liberals compared to conservatives. These findings are particularly interesting in light of Shaw and Benkler’s findings that liberal blogs adopt more participatory technical platforms than their conservative counterparts (Shaw & Benkler, 2012). This implies that participatory affordances may lead to increased deliberation in some cases (Hargittai et al., 2008), but they do not lead to democratic practices. The deliberative affordances are, in fact, exploited to explain and justify the attitudes, beliefs and behaviors previously held by the blogger.

The homophily exhibited in our paper is a *mono-homophily*. That is, it is a homophily exhibited in one dimension among many (e.g. at the blog-post level). But, as *individuals*, we participate simultaneously in *many* networked publics, and thus, we may exhibit many mono-homophilic linking behaviors that might appear inconsistent, or different. This may, for example, be due to our need to present ourselves (Goffman, 1990) in a fitting manner for any specific group.

Castells refers to these multi-dimensions as “the socio-spatial networks of power (local, national, global) that, in their intersection, configure societies” (Castells, 2009, p. 18). Over time these behavioral differences may alter the way we perceive ourselves, thus creating an opportunity, and demand, for self-deliberation. Note that this process may be similar to Centola et al.’s (2007) *co-evolutionary model*, but at a personal level.

The structure of the network, the gatekeeping practices, and the social interactions among people provide a context within which we may or may not exhibit homophily. Our claim is that even if a person exhibits homophily simultaneously in all the network publics she participates in, the context and social ecology for each of those spaces is different. So mono-homophily prevails but the behavior is slightly different for each of the spaces. For example, while we might exhibit a vociferous profile in blogs with people we do not know, we may behave differently in another context, like Facebook, or with our friends. Note that the claim of multi-dimensionality may enhance self-deliberation, but it may also be interpreted as enhancing self-fragmentation of ideas.

Benkler (2006) claims that the networked information economy has increased individual autonomy by increasing “the range of diversity of things that individuals can do for and by themselves,” but the growing autonomy and the opportunity to be heard, as suggested by Benkler, are often *not* translated into more freedoms.
Conclusion

The motivation for our study was to understand how patterns of user behavior within social media may be influential in the political realm. The contribution of this study is: 1) examining patterns of blog-to-content behavior, which benefits the social science community by illuminating homophily at the most granular level; 2) establishing a multidimensional approach to studying patterns of homophily within and among social media platforms. This approach combines quantitative link analysis, interpretation of descriptive statistics, and qualitative content analysis to explore the multiple dimensions within which users participate in the political process.

Using quantitative methods, both general descriptive statistics as well as Social Network Analysis, we analyzed cases where two blogs link to the same video. We find that homophily exists in three different dimensions: the blog, video and post levels. Findings show that while homophily patterns prevail, some limited occurrences of cross-ideological practices exist. The cross-linking practices are not created for the purpose of discourse. Instead, they strengthen previously held stances (e.g., stances that support the political inclination identified with the post) and a negative portrayal and reframing of alternative views. In fact, this represents homophily in the guise of cross-linking. We also find that a bandwagon effect exists, which means that the popularity of a video (as represented by number of views) will have an effect on the likelihood that blogs will link to that popular content.
Acknowledgements

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Bibliography


