Bridging the Virtual and Real: The Relationship Between Web Content, Linkage, and Geographical Proximity of Social Movements

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As the Internet becomes ubiquitous, it has advanced to more closely represent aspects of the real world. Due to this trend, researchers in various disciplines have become interested in studying relationships between real-world phenomena and their virtual representations. One such area of emerging research seeks to study relationships between real-world and virtual activism of social movement organization (SMOs). In particular, SMOs holding extreme social perspectives are often studied due to their tendency to have robust virtual presences to circumvent real-world social barriers preventing information dissemination. However, many previous studies have been limited in scope because they utilize manual data-collection and analysis methods. They also often have failed to consider the real-world aspects of groups that partake in virtual activism. We utilize automated data-collection and analysis methods to identify significant relationships between aspects of SMO virtual communities and their respective real-world locations and ideological perspectives. Our results also demonstrate that the interconnectedness of SMO virtual communities is affected specifically by aspects of the real world. These observations provide insight into the behaviors of SMOs within virtual environments, suggesting that the virtual communities of SMOs are strongly affected by aspects of the real world.

Introduction

As the Internet becomes ubiquitous, virtual space grows to extend and reflect many aspects of the real world from which it was created. One significant result of increased Internet adoption is that individuals can now easily create and propagate their own web content through social media, in contrast to more traditional forms of media that present users with limited options for participation. This increase of user-generated content due to the Internet has caused researchers of various disciplines to take interest in studying the relationships that have formed between real-world phenomena and their representations in the virtual space.

One such area of research seeks to study the virtual representations of social movement organizations (SMOs) in an effort to understand more about how these organizations may function in the real world. Content analyses of SMO websites have revealed how SMOs utilize the Internet as an outreach tool for reaching their targeted audience (Brunsting & Postmes, 2002; Stein, 2009). In addition, social network analyses of SMO online communities have yielded evidence that SMOs use the Internet to connect with one another on a local and regional level (Gerstenfeld, Grant, & Chiang, 2003; Van Laer & Van Aelst, 2010). Essentially, SMOs have found success utilizing the Internet to reach potential recruits, promote activism, and help advance organizational goals. Thus, some researchers have become interested in extending their work to explore the actual ways that social movements leverage the Internet to promote and coordinate activism in the real world.

In particular, social movements advocating extreme social perspectives have been widely studied due to their tendency to have robust and ideologically rich virtual presences. Social barriers inhibiting extreme groups and their ideas from advancing in the real world can be circumvented by using the Internet, encouraging many groups to develop
pronounced virtual identities (Qin, Zhou, Reid, Lai, & Hsinchun, 2007). Research has revealed many interesting characteristics that demonstrate the Internet’s synergistic effect on how extreme groups achieve their goals. Insights gained from these studies have revealed that members of groups with extreme ideologies form strong, cohesive relationships in virtual space (Perry & Olsson, 2009). The ability to form enduring relationships between members is important to these groups, as they rely heavily on participation to conduct their activism and propagate their social perspectives. Furthermore, a prevalence of strong relationships and trust between group members leads to a higher rate of information dissemination and acceptance. By becoming part of a virtual community that vindicates socially extreme perspectives, individuals are able to more easily influence one another and reinforce existing beliefs; in extreme cases, members have been observed using the Internet as a vehicle to incite deviant behavior in the real world, including violent actions (Glaser, Dixit, & Green, 2002). Virtual communities appear to become an integral part of operational and strategic planning by extreme movements. The Internet is an asset often leveraged to promote activism in the real world. Virtual interactions within extreme social groups are ideal for investigating the relationship between real-world and virtual representations.

**Literature Review**

While investigating past studies to build the theoretical and applied knowledge necessary for this research, we identified four areas of literature that have yielded relevant discussion: the relationship between real-world phenomena and their virtual representations, how social movements utilize the Internet, the implications of crowd-sourcing, and the methodologies that other research has used in an attempt to study virtual communities. First, a familiarity with past research observing the relationships between the real world and the virtual space illustrates how the two are known to be interconnected. The next area yields knowledge of how SMOs represent themselves on the Internet, providing a basis for understanding the significance of their online behaviors. We then discuss the implications of crowd-sourcing in SMOs, which is increasingly relevant given the popularity of social media. The last area provides direction and guidance for developing a systematic method to study virtual communities. Last, a familiarity with past studies reveals what gaps exist in current research.

**Real-World Phenomena and Their Virtual Representations**

Previous studies have investigated the relationship between real-world phenomena and their virtual representations in various contexts. Specifically, many of these studies have observed how real-world information dissemination and social networks are reflected within virtual space. We discuss relevant work detailing how information on real-world events disseminates on the Internet, and also how social networks on the Internet may develop in ways relative to real-world attributes of involved network nodes.

A significant portion of the research we reviewed aimed to study how networks existing within the virtual world might be affected by aspects of the real world. In particular, some of these studies considered the structure of online social networks relative to the geographic location of involved members (Cranshaw, Toch, Hong, Kittur, & Sadeh, 2010; Takhteyev, Gruzd, & Wellman, 2012; Yardi, 2010). Both Yardi (2010) and Takhteyev et al. (2012) utilized user-submitted geographic-location data on Twitter to determine whether any correlations exist between the real-world geographic distance of two users, and whether they interact with one another online. In addition, both concluded that online social networks can have their structure influenced by the real-world geographic location of users. Similarly, Cranshaw et al. (2010) utilized frequently updated and dynamic user-location data (e.g., restaurant locations or shopping mall visits) to find strong correlations between users who visit similar locations and the interactions between individuals within virtual social networks. By doing so, the authors demonstrated yet another correlation between the real world and the structure of the virtual world. There appears to be considerable evidence to support the idea that online networks may be related to the real world from which they emerge.

Another closely related collection of work we reviewed aimed to study how information about real-world events is disseminated within virtual space. Such research often has observed social media through a political or social science lens, tracing the occurrence of real-world events and the online reactions of social media users; for example, Karpf (2010) observed how public gaffes by politicians were discussed online, and how they may have affected political campaigns and elections. Karpf (2010) found that social media allowed for extensive propagation of gaffes, ultimately leading to diminished politician credibility and support. In addition, many users discuss news and political events in real time across multiple web blogs or social media services (Karpf, 2008; Spitzberg & Gawron, 2011; Starbird, 2012). Election campaigns, revolutions, and other notable news items can and often are absorbed into discussions existing within the virtual world. The Internet has become another means of information dissemination on important real-world occurrences.

Both areas of research demonstrate a link between the real and virtual worlds. More important, the reviewed studies have demonstrated exactly how significant the real world is in affecting the structure of online social networks and the discussions that occur within virtual communities. Surprisingly, our review yielded no work that has examined the virtual interactions between SMOs relative to their
real-world goals and geographic location. However, before work of that nature can be conducted, further understanding of SMOs’s utilization of the Internet is necessary.

**SMOs and the Internet**

Past studies observing the virtual manifestations of SMOs have found many interesting behaviors that demonstrate high proficiency of leveraging the Internet to accomplish group goals. Information propagation is one of the primary functions of any social movement; social movements have a wide range of sophisticated tools and methods at their disposal in attempting to influence individuals and further advance the movement’s perspectives (McDonald, 1999; Stein, 2009). Chen et al. (2008) observed such techniques being commonly employed to spread propaganda and promote real-world activism. Many opportunities for information propagation appear to be made available through use of the Internet. Virtual communities are often successful at cultivating influence over individuals and helping achieve movement goals and social positions (Spears, Lea, Cornelissen, Postmes, & Haar, 2002; Van Laer & Van Aelst, 2010). The virtual world is one of the richest environments for propagating socially deviant perspectives.

With the ability to influence the perspectives of individuals, social movements are able to accomplish their recruiting goals. Josey (2010) found that SMOs successfully use their online presence to recruit new members to their cause. In addition, while many recruitment campaigns may be explicit, previous studies have observed and detailed proficiency in covert operations; Schafer (2002) observed that movements have become adept at targeting unsuspecting Internet users and baiting them to further examine a movement’s social perspectives. Exposure to SMO virtual communities appears to have real-world implications, as individuals become susceptible to adopt a particular movement’s social perspectives and become activists.

In addition to propagating information to recruit new individuals, a social movement also will utilize its virtual presence to cultivate loyalty and staying power among members. Both Wellman and Gulia (1999) and Stein (2009) found that the Internet can be used to successfully form and maintain strong, supportive community ties among members of a group. Virtual communities promote interactions between members that reinforce group norms and strengthen group influence (Spears, Postmes, Lea, & Wolbert, 2002a). As individuals become increasingly familiar with other members of a social movement group, trust begins to be established between members. The members are likely to have a greater impact upon each other, with influence potentially permeating into the real world as members promote deviant perspectives and calls for activism. These communities appear to serve as hubs where individuals share their views, disseminate knowledge, and encourage each other to support the movement’s social positions (Bowman-Grieve, 2009). The loyalty-building aspect of virtual communities helps create cohesiveness within groups, which can cause members to be more susceptible to social movement propaganda. Members may be more easily encouraged to voice their activism in the real world. Virtual communities appear to be used quite extensively to perform operations that affect both the virtual and the real world.

Virtual communities are especially important to social movements holding extreme views. Social barriers preventing extreme groups and ideas from advancing in the real world can be circumvented online (Perry & Olsson, 2009). Extreme social movements typically have robust and ideologically rich virtual presences, which they use as a tool for information dissemination, persuasion, loyalty building, and member recruitment. Many variables that would prevent the propagation of extreme social perspectives in the real world are bypassed through the use of virtual communities; there is a strong link between the real-world goals of an extreme group and its online activities. These groups benefit from managing a virtual presence because they are able to conduct their activism online and avoid social obstacles and scrutiny that they would face in the real world from protestors and other groups or individuals.

**Implications of Crowd-Sourcing**

Another important element to consider when studying SMOs is how such entities source their information. With increasing use of computers and the Internet, individuals are much more capable than they were in the past to disseminate new information, for example, to publish product reviews, exercise routines, and bicycle routes (Fu, Abbasi, & Chen, 2010; Muller et al., 2011). Coordination of disaster relief efforts and dissemination of alternative journalism during political or social events also often relies on crowd-sourcing of information by individuals (Gao, Barbier, & Goolsby, 2011; Poel & Borra, 2011). For example, during the 2010 Toronto G20 summit, protestors began to use the hashtag “#g20report” when posting relevant new information and discussion to social media websites. By using the hashtag, users could easily organize all related content and updates regarding the G20 protests, leading to easier and more organized dissemination. Such use of social media has been witnessed in many subsequent sociopolitical events.

Through social media, individuals who compose a social movement can each directly shape movement direction and goals. During the 2011 Egyptian protests, technologically savvy protestors were able to disseminate information and media through social media (Tufekci & Wilson, 2012; Wiest, 2011). The social movement against the political leadership in Egypt was organized and led by the contributions of individuals. Similar to the G20 protestors, collective action and contributions were the driving force behind the Egypt protests. It appears that cyber-enabled social movements benefit from the ability to crowd-source information and action from the individuals who compose the movement.
Research on Virtual Communities

To aid in the development of a research design, past literature investigating virtual communities was reviewed. Previous studies have outlined effective means for conducting research to gain insight into virtual communities, which are often similar to traditional research methods from social science (Li, 2004). For example, social scientists may study an organized crime group through network analysis or by observing the relationships between group participants (Wellman, 1996); on the Internet, hyperlinks can be viewed as “ties” between groups (Niki et al., 2011). Similarly, the content of websites and social media messages are often analyzed for additional information and context about the content’s source (Song, Chi, Hino, & Tseng, 2007; Tang & Yang, 2010); this type of analysis also is rooted in traditional methods of information gathering concerning individuals and organizations. Thus, it is useful to refer to more traditional research methodologies and observe how they can be applied to virtual community research.

First, collections of content from these communities have to be built. Many past studies have appeared to take an automated approach to collecting data, using spidering programs to capture a variety of web communities such as blogs, medical patient forums, and underground hacker communities (Benjamin & Chen, 2012; Tang & Yang, 2010). Similar to this research, Qin et al. (2007) identified the virtual communities of several social movement groups and employed a web crawler to download the web pages of the communities, providing the authors a snapshot of every web community that they were studying. This snapshot can be dissected and analyzed in a multitude of ways, providing additional context to the profile of a particular social network.

The web pages that compose the downloaded snapshot can be used for both hyperlink analysis and content analysis. Hyperlink analysis can reveal deeper knowledge about the behavior patterns of virtual communities (Hu, Kaza, & Chen, 2009; Song et al., 2007). Observation of strong linkage between members of a social network can be an indicator of strong collaboration (Hu et al., 2009). In addition, this type of social network analysis can help identify previously unknown relationships between network nodes; for example, the aforementioned Cranshaw et al. (2010) study was able to find a correlation between Twitter users who visit the same real-world businesses and their interconnectedness on the Internet.

In this study, we analyze relationships between aspects of the real world and virtual representations of socially extreme movements. A suite of automated data-collection and analysis techniques is used to discover how the real world and virtual space are interconnected. Attributes of each social movement’s virtual identity will be compared to physical characteristics to determine relationships between the real world and the virtual space. In addition, the various ideologies and social perspectives of groups will be used to compare differing virtual representations.
TABLE 1. Southern Poverty Law Center Spring 2009 Intelligence Report data set.

<table>
<thead>
<tr>
<th>Ideological Class</th>
<th>Subclasses</th>
<th>Description</th>
<th>No. of Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patriot</td>
<td>militia, media, ministries, publishing, support,</td>
<td>opposed to the “new world order” or advocates</td>
<td>141</td>
</tr>
<tr>
<td></td>
<td>vendor, political/citizen groups, and sovereign/</td>
<td>extreme antigovernment doctrines</td>
<td></td>
</tr>
<tr>
<td></td>
<td>common law/jural</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hate</td>
<td>Ku Klux Klan, neo-Nazi, White nationalist,</td>
<td>advocates extreme prejudice or violence on the</td>
<td>630</td>
</tr>
<tr>
<td></td>
<td>racist skinhead, Christian identity, neo-C</td>
<td>basis of race or religion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Confederate, Black separatist, and general hate</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Research Test Bed

The Southern Poverty Law Center (SPLC) is an established legal advocacy group that tracks many American groups that advance socially deviant ideals. Founded in 1971 during the American civil rights movement, the SPLC combats hate, bigotry, and social injustices. It has routinely filed successful lawsuits against violent, socially extreme groups who seek to discriminate and exploit vulnerable members of society. Further, the SPLC is often recognized as a prominent force in continuing the fight against institutional racism.

The SPLC releases a quarterly publication listing all domestic groups they track, along with additional commentary and information concerning studied organizations. Data on the social movements were acquired from the SPLC Spring 2009 Intelligence Report, which is comprised of a collection of 771 groups promoting extreme social perspectives through real-world activism in the United States and who also maintain strong virtual presences and participate in virtual activism.

Table 1 summarizes the SPLC data set according to group ideological affiliations and categorizations. All groups belong to one of two subsets: hate groups or patriot groups. Hate groups promote discrimination and social injustice against peoples of different ethnicity, religion, and other reasons. For example, White supremacist groups would be classified as hate groups under the SPLC categorizations. Patriot groups tend to hold deviant perspectives concerning societal structure and governmental organizations. Separatist and counterculture groups would be classified as patriot groups by the SPLC. Both categories have several, more specified subcategories for further group classification.

The data set also provides the web addresses of official group virtual communities and geographical locations of group headquarters. Since the study is focused on evaluating the virtual relationships between these groups in relation to their physical proximity in the real world, groups in the SPLC Report without a listed geographical location were omitted. In addition, since some groups change the web addresses of their virtual communities, not all of the websites specified in the report could be accessed for collection (as of Summer 2009). Table 2 summarizes our final SPLC collection compiled after filtering out groups that did not have the necessary attributes for this study.

To better understand the significance of where and why hate and patriot movements manifest, we refer to past political science studies. Hate groups are seemingly concentrated in conservative areas with a large minority representation; states with an overall conservative perspective tend to have more hate groups (McCann, 2009). As conservative areas are more resistant to social changes and modernization, they hold on to older, socially prejudiced beliefs that encourage deviant and malicious behavior against minorities. For example, hate-group activity has been found to increase in conservative areas where African Americans have a strong representation in local government (Fording & Cotter, 2007). Due to stronger minority representation, some individuals may feel justified in hate groups or carry out hate-group activities.

Previous research also has revealed the origin of patriot groups, which emerge from communities experiencing social instability and where there is a lack of faith in government. These characteristics that can lead to the formation of patriot groups seem to stem from the loss of jobs and social disorganization within a community (Freilich & Pridemore, 2005). Dyke and Soule (2002) found that areas experiencing social restructuring also encourage patriot groups to form. These groups tend to be more dispersed than hate groups, as areas with growing social instability and transformation can be found anywhere, while hate groups generally congregate within conservative regions (see Figure 1 and Figure 2).

Research Design

Our research design (Figure 3) consists of seven stages: website collection, hyperlink extraction, linkage calculation, content extraction, content similarity calculation, geographical distance calculation, and correlation analysis. Insights borrowed from previous research have aided us in developing a design that should effectively capture the relationships between aspects of the real world and the virtual representations of social movements. The methods we employ allow us to quantify aspects of both the virtual and
real, which are then used in various correlation analyses that are restricted to varying ideological scopes.

**Website Collection**

Web pages from the virtual communities of social movement groups were collected in an automated fashion using a spidering system. The top-three domain levels were collected as a representative sample of the community. All web pages were collected in a short time span to take a snapshot of the virtual communities. This collection of websites will be run through a series of analyses to better understand the relationships between the real world and virtual space.

**Link Analysis**

Hyperlinks were analyzed to measure the intensity of the virtual relationships established between any two groups in the data set. The amount of linkage (i.e., hyperlinks between groups between two groups) was defined as the total number of links from all pages within either website domain.
pointing to the other domain. Strong linkages between groups may be indicators of collaboration in the real world while weak linkages may be inferred as sparse or nonexistence of collaboration. We extracted hyperlinks from the collected web pages of each website to represent the linkages a virtual community maintains to other websites.

\[ \text{Website Linkage}_{ij} = \text{Links}_{i \rightarrow j} + \text{Links}_{j \rightarrow i}. \]

\[ \text{Links}_{i \rightarrow j} = \text{Number of hyperlinks from Website 1 pointing to Website 2}. \]

\[ \text{Links}_{j \rightarrow i} = \text{Number of hyperlinks from Website 2 pointing to Website 1}. \]

Content Analysis

Content analysis provided a method for comparing the perspectives advanced between different groups. The textual content of websites was extracted after HTML code and function words were filtered. Websites with sparse content were excluded from analysis because they would unfairly skew the correlation analyses. To compute content similarity, word vectors were created from each group’s website text to represent the content of their discussion and social position. The similarity of discussions and content publication between two groups within the dataset was defined as the cosine similarity of their website word vectors. Stronger similarities may be an indicator of shared social perspectives and ideologies. Weaker similarities suggest a greater difference in ideals and focus.

\[ \text{sim}(\sigma_1, \sigma_2) = \frac{\sum_{j=1}^{||v_1||} v_{1j}(j) \cdot v_{2j}(j)}{||v_{1j}||_2 \cdot ||v_{2j}||_2}, \]

where \( \sigma \) is a website, \( v_\sigma \) is a website word vector, and \( j \) is a word vector element.

Geographical Distance Calculation

Utilizing the real-world locations of the headquarters of each group, the geographical distance between all pairs of groups was calculated. Locations of group headquarters provided by the SPLC were transformed into latitude and longitude coordinates. Geographical distance was defined as the Euclidean distance between the two latitude and longitude coordinates. The amount of distance between two groups may have implications on relationships existing within the virtual space.

\[ \text{Geographical distance}_{i,j} = \sqrt{(X_1 - X_2)^2 + (Y_1 - Y_2)^2}. \]

where \( X_1 \) is Group 1 latitude, \( Y_1 \) is Group 1 longitude, \( X_2 \) is Group 2 latitude, and \( Y_2 \) is Group 2 longitude.

Correlation Analysis

Virtual linkage intensities, content similarities, and geographical distances of the social movement groups were compared through several correlation analyses. Geographic distance is used as a real-world attribute to measure differences between the virtual aspects of groups. In essence, distance may have an influence upon the strength of relationships between the virtual representations of social movement groups. Correlations were performed at varying levels of ideological homogeneity as defined by SPLC categorizations. Analysis at multiple levels allows us to measure whether the ideologies of social movement groups affect aspects of their virtual communities. Three levels of ideological homogeneity were considered: the overall collection, the patriot- and hate-group ideological level, and the patriot- and hate-subclass ideological level. Analysis at varying levels of ideological homogeneity is intended to reveal if the similarity of ideologies between groups affects certain aspects of their communities and relationships in the virtual space. In addition, differences may be revealed in how certain types of groups utilize virtual space. A log transform was applied to the linkage intensities prior to analysis and also to geographical distances when correlated with linkage. The log transform was implemented to reduce statistical skewness and to provide a more fair representation of the relationships between the virtual and real measures.

Research Hypotheses

Based on the literature, several expectations were established regarding the relationship between linkage intensity, content similarity, and geographical distance. We believe that the real-world aspect we observe, which is each group’s geographic location, will have an influence on the virtual...
behaviors of groups. Previous literature has suggested that certain social movement groups are often founded within specific geographical locations, which would inherently place the group among others that share similar social perspectives (Dyke & Soule, 2002; McCann, 2009). Thus, groups geographically near each other may share social perspectives and subsequently may have stronger linkages and content similarities. In addition, as ideological homogeneity becomes more similar, stronger relationships are expected to form between the real and virtual aspects due to a higher similarity in social perspectives. The following research hypotheses were developed:

**H1:** A significant correlation will be observed between the physical distance between groups and their virtual interconnectedness.

**H1a:** A significant correlation will be observed between the physical distance between SMOs and their virtual linkage intensity.

**H1b:** A significant correlation will be observed between the physical distance between SMOs and their virtual content similarity.

**H2:** A significant correlation will be observed between content similarity and virtual linkage intensity among the social movement groups.

**H3:** Correlation analyses at varying degrees of ideological homogeneity among the groups will reveal distinctive relationships between the virtual aspects of the groups and their physical proximity.

**H3a:** The correlation observed will increase in significance as ideological homogeneity increases among the groups included in the analysis.

**Results**

As hypothesized, different levels of analysis produced unique correlation analysis results; Table 3 summarizes our findings. First, we discuss the observed correlations and their potential implications. Later, we present some case examples from our test bed which best demonstrate the significance of observed correlations.

The first analysis included all relationships identified among all groups in the data set. The observed negative correlation between content similarity and geographical distance implies that groups closer to one another in the physical world were found to have more similar web content and focused discussion on shared topics of interest. The correlation is statistically significant, suggesting that groups who are close geographically discuss similar topics and may be collaborating in real-world activism. This finding supports H1b; the correlation can be explained by previous literature which has suggested that hate groups, the majority ideology in our data set, are geographically clustered and may collaborate in real-world activism.

A second round of analyses was performed at the patriot- and hate-group level to determine differences between how certain groups utilize their virtual communities to promote activism. At this level of ideological homogeneity, the patriot groups exhibited no significant correlations between the virtual and real measures. Unlike hate groups, patriot groups do not necessarily spring from socially conservative areas; they can form anywhere that social instability occurs. Further, the reasons for social instability may differ from geographic region to region, and thus patriot groups may focus their efforts on differing causes (Freilich & Pridemore, 2005). Conversely, hate groups that are physically close to one another appear to have strong content similarities; this supports the findings of previous research by suggesting that collaborative real-world activism occurs, further supporting H1b. Interestingly, linkage intensity was negatively correlated with geographical distance, but at levels below statistical significant. It appears that patriot groups link with others that are geographically distant, perhaps to circumvent physical distance barriers, while hate groups have strong linkage with other physically nearby groups, implying that collaboration of real-world activism may occur. Correlation between the virtual measures remains at levels that are not statistically significant; ideological homogeneity may be too broad at this level of analysis.

### Table 3. Correlation analysis results.

<table>
<thead>
<tr>
<th>Correlation analysis results</th>
<th>Linkage intensity</th>
<th>Physical distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>All groups</td>
<td>Linkage intensity</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Content similarity</td>
<td>.00817</td>
</tr>
<tr>
<td>Patriot groups</td>
<td>Linkage intensity</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Content similarity</td>
<td>−.00238</td>
</tr>
<tr>
<td>Hate groups</td>
<td>Linkage intensity</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Content similarity</td>
<td>.01295</td>
</tr>
<tr>
<td>Patriot–within subclass</td>
<td>Linkage intensity</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Content similarity</td>
<td>.06384</td>
</tr>
<tr>
<td>Hate–within subclass</td>
<td>Linkage intensity</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Content similarity</td>
<td>.05622</td>
</tr>
</tbody>
</table>

*Note.* *p < .1. **p < .05, two-tailed test.
The third group of analyses focused on the relationships that groups held with other members of their own ideological subclass. The correlation between patriot-group geographical distance and content similarity is positive and significant; the results suggest that there are patriot groups dispersed across the United States with similar social perspectives and ideologies. This finding also supports H1b, H3, and H3A. Linkage intensity was also related to geographical distance in a positive direction, although at levels that were not statistically significant. Patriot groups link to other groups that are geographically far apart, perhaps to span distances. In addition, these groups may wish to connect with others that share similar social perspectives, but they may avoid forming ties with physically near groups. This behavior may indicate competition between groups to recruit future members, as observed in Zhou et al. (2005). Without linking to others who are physically near, a group has the potential to recruit more individuals from the local population.

Analysis of hate groups within subclasses also revealed interesting relationships. Content similarity and geographical distance remain strongly correlated in a negative direction for hate groups. Groups closer to one another in the physical world were found to have more similar content. The relationship between linkage and geographical distance is significant when the analysis is restricted to ideological subclasses. Previous literature has found that hate groups coordinate real-world events to unite members and promote similar messages. They do so to recruit new members, promote propaganda, and attract publicity (Brower, 2009). This may be interpreted as evidence that hate groups use the Internet to coordinate real-world activism, and their ideologies are more geographically limited in context than patriot groups. This supports H1a, H1b, H3, and H3A.

Counterintuitively, virtual linkage intensity and content similarity were not found to be significantly correlated at any level of ideological homogeneity. Intuition would suggest that significant correlations would be discovered between the two virtual aspects of the social movement groups. Upon further investigation of some of the relationships existing within our data set, we found that interconnected groups may link to each other because they share similar social perspectives, but that their actual content discussed different, yet related, concepts. For example, two heavily interconnected groups, the “Church of the sons of YHWH” and “Aryan Nations,” both share White nationalist ideology. However, one group concentrates on promoting anti-Jewish sentiment while the other group’s content tends to cover more political concepts and events.

To better understand the social movement groups, we further investigated our analysis results through illustrative examples. In our examples, the markers on the map represent different groups. Groups of interest are denoted with green markers and are numbered. Pictures of their websites also are included. Red markers refer to hate groups, and blue markers indicate patriot groups. Lines between groups are illustrations of discussed relationships, with line thickness denoting the relationship’s strength. Patriot groups have significant correlations concerning content similarity and geographical distance while hate groups have significant relationships concerning both virtual aspects when correlated with physical proximity.

Figure 4 demonstrates the content similarity of the American Patriot Friends Network (APFN) within the patriot-group ideological level. The APFN characterizes the “American patriot” as an individual who upholds the U.S. Constitution and is skeptical of the American government operating within the legal bounds of the Constitution. It has strong content similarities with other groups who share constitutionalist perspectives, and weak linkages with groups who may focus their activism on other causes. One strong instance of content similarity exists between the APFN (A) and the Conservative USA group (B). Both groups share similar perspectives in referencing the Constitution as the highest authority in the United States. This behavior is again observed between the APFN and the Lawful Path group (C). The Lawful Path group is dedicated to ensuring that the U.S. government abides by the Constitution, an interest shared with the APFN. However, the APFN has much weaker content similarity with groups who refer to constitutional authority, but actually focus on different topics. For example, the Liberty Gun Rights (D) group focuses its efforts on advancing gun rights, and uses the Constitution only as a minor justification for gun ownership should be unregulated; the APFN has weak content similarity with this group.

An example of content similarity within the hate-group ideological level can be seen in Figure 5. The League of the South (A), in Killen, Alabama, has stronger content similarity with groups who are nearby as opposed to groups who are physically distant. Furthermore, the League of the South has relationships with nearby groups who take pride in American Civil War Confederate perspectives; the strongest content similarities are with the Virginia League of the South (B), the Louisiana League of the South (C), and the Florida League of the South (D). All groups are local chapters of an umbrella organization. This type of relationship between groups is expected, as previous literature has stated that hate groups are generally geographically constrained to regions holding conservative social perspectives (Fording & Cotter, 2007). The League of the South is limited by this geographical constraint, and thus chapters of the organization are necessarily physically near to each other. Conversely, the Alabama League of the South has weak relationships with other American nationalist organizations that do not hold a Confederate identity.

Figure 5 demonstrates some of the observed virtual linkage behavior within the hate-group ideological level. The Covenant People’s Ministry (CPM), in Brooks, Georgia, has stronger virtual linkage with groups that are physically nearby while possessing weak virtual linkage with groups who are further away. Within this relationship between linkage and distance, CPM (A) has strong linkage...
FIG. 4. An example of virtual content similarity behavior between various patriot groups. The American Friends Patriot Network (A) has strong similarity with other constitutionalist groups such as Conservative USA (B). Both groups discuss political news and events from the perspective of constitutionalism. However, they have weaker relationships with groups who may rely on constitutional ideals but have different goals, such as the pro-gun Liberty Gun Rights (D). [Color figure can be viewed in the online issue, which is available at wileyonlinelibrary.com.]

FIG. 5. Content similarity behavior between hate groups. Social movement groups belonging to the umbrella organization “League of the South” all share similar web content. A “League of the South” banner can be found on the web pages of all affiliated groups, further demonstrating close collaboration among involved groups. [Color figure can be viewed in the online issue, which is available at wileyonlinelibrary.com.]
intensities with other groups that claim to be upholding Christian values while propagating White supremacist agendas, such as the Church of the Sons of YHVH (B) and StormFront (C). Christian groups that lacked a White supremacist ideology, such as the America’s Promise group (D), had much weaker linkage with CPM.

**Conclusion**

In this research, data from the SPLC Spring 2009 Intelligence Report were used to examine extremist social movements and how they exist online and in the real world. This data set was selected for study due to its information concerning ideologies and geographical locations of groups. The data enabled us to gain insights into the behaviors of social movement groups in bridging real and virtual environments. Relationships between content similarities, virtual linkages, and geographical distances were explored in this study at different levels of ideological homogeneity. Significant correlations between the virtual and real were observed, specifically when relationships were restricted to ideological class and subclass.

Patriot and hate groups exhibited distinctive characteristics in their virtual behaviors; patriot groups are more widely dispersed across the United States while hate groups tend to be clustered in specific geographic regions. Our results indicated that patriot groups dispersed across the United States share similar social positions, but that they may not necessarily be interconnected. This may be due to findings outlined in previous studies that patriot groups discuss topics concerning social instability, but that their focus is on a geographically local level or a specific aspect of societal structure (Dyke & Soule, 2002). In addition, the results showed that patriot groups are more likely to have weaker content similarities with other groups who are nearby a opposed to those who are geographically far. Physically near groups who share a local population from which to recruit new members may purposely focus their content on differing social issues to avoid competing over future members (Zhou et al., 2005). Patriot groups may have stronger content similarities with geographically remote groups due to this lack of competition; however, given their local focus, there may not be an interest in connecting to far-away groups despite shared ideologies.

Hate groups located near one another geographically were tightly interconnected virtually. Relationships are particularly significant when analysis is restricted to hate groups of the same subclass. This may indicate coordination between physically near groups in conducting real-world activism driven by mutually held ideologies, supporting the conclusions of previous studies. Virtual linkage and content similarity were not found to be significantly correlated at any level of ideological homogeneity. Manual scrutiny of content

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*Fig. 6. Virtual linkage behavior between hate groups. Hate groups who are geographically close tend to exhibit more linkage between virtual communities. This correlation was observed in multiple instances throughout our hate-group data set. [Color figure can be viewed in the online issue, which is available at wileyonlinelibrary.com]*
revealed that many groups discuss similar topics, but in different contexts, perhaps explaining the lack of correlation.

This research provides a framework for future analyses of the relationship between virtual and real-world aspects. The correlation of linkage intensity and content similarity with geographical distance is unique to this study. In addition, this research provides insights into social movements; in particular, our results reveal how social movements’ online behaviors are influenced by real-world social and geographical positions.

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