

PRIDE OF PLACE:

Mainstream Media and the Networked Public Sphere

By John Kelly

Papers 2008

MEDIA
RE:PUBLIC



Berkman

The Berkman Center for Internet & Society
at Harvard University

PRIDE OF PLACE:

Mainstream Media and the Networked Public Sphere

INTRODUCTION

Familiar questions about whether blogs and other web-native media are superseding legacy mainstream media, particularly institutional journalism, tend to oversimplify the matter. New and old forms are held up as antagonists in a zero-sum fight over eyeballs, money, quality, professionalism, and legitimacy. The key question is taken to be about where people will encounter their news, entertainment, and other media objects, and secondarily about qualities of those objects. Will weblogs replace newspapers as primary sources of information? Will online video downloads reduce television viewing hours? Are the articles as fair, opinions as informed, and facts as correct coming from a new media source as from an old one? These questions are important, not least to legacy media institutions, but there is a bigger picture to consider as the Internet continues to rewire society's collective nervous system.

We tend to view current changes through an accustomed lens, and ponder what is going on with “the media” in the face of the Internet. It is taken to be a story about information consumers and their preferred troughs: readers and their newspapers, couch potatoes and their TV shows, commuters and their radios, the peanut gallery and the stage. In truth, we are witnessing a recasting of the sociotechnical infrastructure of public communication with consequences arguably more profound than previous shifts in media, such as those from theater (or actually, magic shows and traveling illusionists) to film, or radio to TV. The line between audience and stage is blurring, public discourse is less a lecture and more a conversation.¹ Cyber-utopian hype notwithstanding, this emerging conversation is not and probably never will be particularly egalitarian. Some voices will always speak louder than others. But there are a lot more voices, and more importantly, these voices are enmeshed in structured, self-organizing, and at least somewhat meritocratic networks of interest and expertise that *produce* information, knowledge, and opinion as much as they *transmit* and *consume* them. But though legacy media institutions face very real commercial challenges in the brave new information ecosystem, they continue to perform a central role. Continued pride of place in the emerging *networked public sphere*, to use Yochai Benkler's phrase,² is available to those that adapt and survive.

The empirical core of this analysis demonstrates several things about the vibrant new network environment of blogs, online media and other websites. First, emergent

clusters of similarly interested bloggers provide structure to this network, shaping the flow of information by focusing the attention of thematically related authors (and their readers) on particular sources of information. Second, the network includes new actors alongside old ones, knit by hyperlinked multimedia into a common fabric of public discourse. And third, legacy media, particularly journalistic institutions, are star players in this environment. These points reinforce and ground some observations we can already make about the ways in which Internet-based technologies, and the manifold genres of interaction they afford, are re-architecting public and private communications alike and thus altering the relationships between all manner of social actors, from individuals, to organizations, to mass media institutions. Brief treatments of some of these observations frame the empirical analysis to follow.

PERSONAL/PUBLIC, INTERPERSONAL/MASS, AND THE SPACES IN-BETWEEN

Besides challenging the landscape of mass media, Internet technologies have enabled shifts in methods and practices of interpersonal communication more of a kind with those following diffusion of the telephone a century earlier. Though vastly under-studied, the incorporation of the telephone into early twentieth-century life has been credited with (or blamed for) myriad alterations in patterns of private sociability and organizational ecologies. The ability to speak at a distance enables social coordination on a larger geographic scale, avoidance of physical rituals of social access, physical decentralization of management and manufacturing, resizing of markets, changes in the relationship between individual and community, and many more.³ The widespread adoption of the telephone (over 30 to 40 years, much slower than the Internet) fueled many of the same concerns and speculations that have swirled around the Internet these last ten years.⁴ From email and instant messaging in the first wave of Internet adoption, to Facebook and Twitter today, Internet-based personal communications, along with mobile phones, are once again rewiring strong-tie social networks.

But if new technologies of interpersonal communication continue trends unfolding for over a century, something else is more new. Internet technologies enable many-to-many

forms of communication that support flows of knowledge and coordination among groups in the intervening levels of scale in social organization, larger than face-to-face primary groups and smaller than mass publics. Although previously, some modes of communication mediated interpersonal networks (talking face-to-face, mail, telephone) and different ones spanned mass audiences (radio, newspapers, TV), now—thanks to digital code and Internet technologies—virtually any communication of any social scope can commingle over the same wires and airwaves, using the same protocols and standards. What is good for the big is good for the small, and good for the medium-sized as well. A corporation, a newspaper, the federal government, a celebrity, your grandmother, the Sierra Club, and the pizza place on the corner can all have a blog, or even just a regular old website. And they can link to each other if they choose.

This unification of channel for communication across all levels of social scale is critical, because the previous segregation has been so foundational to social life in the widest sense. Individuals had modes of communicating among each other on the scale of tens or hundreds (up to just 150, by some accounts⁵), small numbers of large institutions wielding significant capital or state power had completely different modes of communicating to mass audiences of hundreds of thousands to millions, and in-between, *organizations* structured the many-to-many communication of information, and coordination of action, among hundreds to tens of thousands. In the organization, communication is accomplished and knowledge brokered by means of bureaucracies, workgroups, hierarchies, and communities of practice. As we ponder the questions to which we will return, it is valuable to entertain the idea that as the telephone is to the teenager, and the television is to the advertiser, so the trade show is to the equipment manufacturer or the canvassers' strategy meeting is to the political party, a medium for communicating information and coordinating action among social actors operating at particular levels of social scale. Now, however, many-to-many and social-scale-spanning Internet communications technologies are eliminating the channel-segregation that previously reinforced the independence (or mutual deafness) of classes of actors at these levels of scale, enabling (or more accurately in many cases, forcing) them to represent themselves to one another via a common medium, and increasingly (as email appeals give way to blog posts) in ways that are universally visible, searchable and persistent.

Considering public affairs in particular, the accustomed view of democratic life in the United States sees, on the one hand, the *public* as a mass audience served by *the media*, a set of communicative organs under the guardianship of a professional fourth estate, and on the other, *civil society* as a set of membership organizations, advocacy groups and other not-for-profits channeling practical energies and resources on behalf of particular issues and interests. But as many-to-many Internet-based public communications have taken their place alongside traditional one-to-one (personal) forms and one-to-many (broadcast) forms, old distinctions between *communication* and *organization*, or *talk* and *mobilization*, have softened. The channel segregation that kept social actors in the middle range working via bureaucracies, phone banks, and direct mail is not gone, but increasingly middle-range actors (old and new) can accomplish knowledge and coordination functions via public-facing representations on the Internet, raising money and awareness via new strategies in the networked public sphere. So just as the Internet brings individuals new challenges and opportunities for organizing social life, and media institutions for reaching large publics, so the field of political and social advocacy is shaken up as well, with old organizations trying to innovate, and new ones springing up to challenge them. In their need to reinvent themselves online, legacy media organizations are in the same boat as teenagers, corporations, and civil society organizations. Of course these social actors have diverse responses to their respective challenges, but there is one thing all of them, big and small, are doing: blogging.

MANY NETWORKS, ONE TEXT

The online genre we call a “weblog” or “blog” is now employed by virtual every sort of entity represented online. Firms, groups, organizations, clubs, government offices, schools, political parties, event organizers, and so on now have blogs, publishing streams of posts about whatever serves their particular purposes, which are many and varied. Blogs by individuals in particular demonstrate a wide variety of purposes; professional, social and personal goals are frequently accomplished on the same blog. Originally viewed essentially as a form of amateur editorializing, aimlessly undirected at whomever in the big anonymous world might happen to care, blogs now serve actors at all levels of social scale, in pursuit of all manner of ends, as a key interface for public interaction.

Interaction *with whom* becomes a very interesting question. Because they are publicly visible, as opposed to other more private modes of online interaction with known and selected actors, blogs are promiscuously available representations of what a person or organization would like the world to know. In practice, however, it is not the world at large that cares about the content of any given blog, but specifically interested others, as often arise around offline social configurations with which we are quite familiar. Networks of blogs bring together parents, open-source software geeks, citizens riled up about ideologically polarized political issues, hobbyists of many stripes, far-flung academic colleagues, celebrity fans, cat lovers, and in short, interest groups, communities of practice, and all manner of networks that exist offline as well in some recognizable form. Certainly there are new networks we could identify as web-native, but mostly blogs serve as the public interface for a wide variety of “real-world” *weak-tie* networks.

Online readers typically navigate hyperlinked chains of related stories, bouncing between numerous websites, returning periodically to favored starting points to pick up new trails. The collection of hyperlinks that structures a reader’s experience also comprises a network, which is itself a subnetwork of the enormous tissue of links connecting most sites on the global Internet. As the number of blogs has increased in recent years, this “citizen-generated” network is quickly becoming the Internet’s most important connective tissue. In a way quite more sober than the clichéd “_____ as text” postmodern literary criticism trope, the combination of text and hyperlinks (and increasingly, *hypermedia*) makes the blogosphere arguably as much like a single extended text as it is like an online newsstand. And to the extent that readers’ patterns of browsing tend to follow the direction of links available in this hypertext network, the structure of the blogosphere suggests a kind of “flow map” of how the Internet channels attention to online resources. So this is a

text authored by emergent collectives: public, persistent, universally interlinked yet locally clustered, and representative of myriad social actors at all levels of scale. It is not simply “media” in the familiar sense of packets of “content” consumed by “audiences.”

WE WRITE, WE LINK, WE KNOW

Concerns about an “informed public” typically see a neat divide between the public on the one hand, and the information with which they are to be enlightened on the other. Knowers and that which is known (or not known) are two separate classes of entity. But even early studies of “media impact” appreciated the role social networks play in the formation and diffusion of political attitudes. Writing in 1955, Katz and Lazarsfeld revealed how individuals take cues on various matters of knowledge and judgment from issue-specific influentials embedded in social networks.⁶ Their proposed “two-step flow” of communication saw the mass media’s impact on attitudes mediated through these local influentials, who were particularly attentive to matters on which their neighbors judged them expert (not unlike today’s bloggers). If social networks are important to the formation of knowledge and attitudes at the ends of social scale, personal networks and mass media, they are even more critical in the middle range. Studies of the production and transmission of knowledge in firms, organizations and professions emphasize the importance of *communities* and *networks of practice*.⁷ The vision is very different than one of definitive sources and more or less attentive mass consumers:

In the networked public sphere, online clusters form around issues of shared concern, information is collected and collated, dots are connected, attitudes are discussed and revised, local expertise is recognized, and in general a network of “social knowing” is knit together, comprised of both people and the hyperlinked texts they co-create.

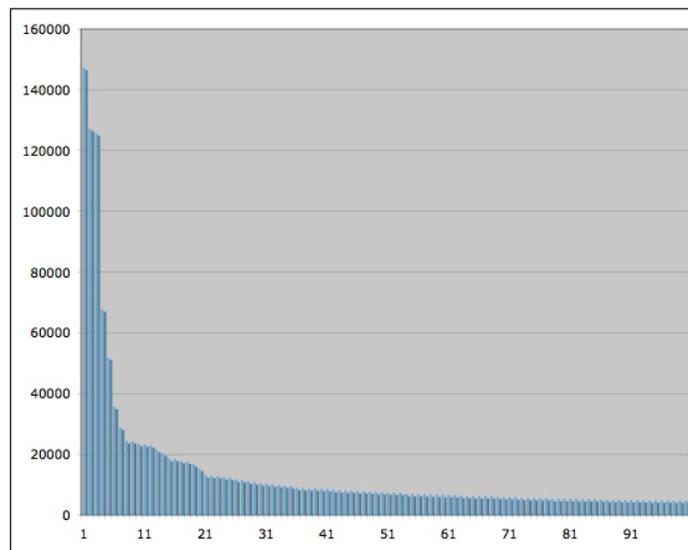
“As people communicate online, that conversation becomes part of a lively, significant, public digital knowledge—rather than chatting for one moment with a small group of friends or colleagues, every person potentially has access to a global audience. Taken together, that conversation also creates a mode of knowing we’ve never had before. . . . Now we can see for ourselves that knowledge isn’t in our heads: It is between us.” —DAVID WEINBERGER⁹

THE BLOGOSPHERE AND ONLINE MEDIA: A NETWORK VIEW

Blog networks contain a number of different kinds of hyperlinks. There are links for navigation, links to archives, links to servers for embedded advertising, links in comments, and links to link tracking services, among others. This analysis is concerned with links that represent the conscious choices of bloggers, and these fall mainly into two categories: *static* and *dynamic*. Static links are those that do not change very often, and are typically found in the *blogroll*, a set of links a blogger chooses to place in a sidebar. Blogroll links are created for different motivations, but the network formed by them is relatively stable, and represents a collective picture of bloggers' perceptions of the blogosphere and their own positions within it. *Dynamic* links change frequently, and typically represent links embedded in blog posts, a hard measure of a blogger's attention. Analysis of dynamic links allows identification of groups of bloggers who are more "attentive" to similar online links. Over time, they share preferences for linking to sets of online resources, including mainstream media (MSM), other blogs, nongovernmental organizations (NGOs), local community websites, and government, among others. These *attentive clusters* comprise bloggers who share common interests and preferred sources of information. Identifying these clusters and discovering how they drive traffic to particular online resources is the key to understanding the online information ecosystem.

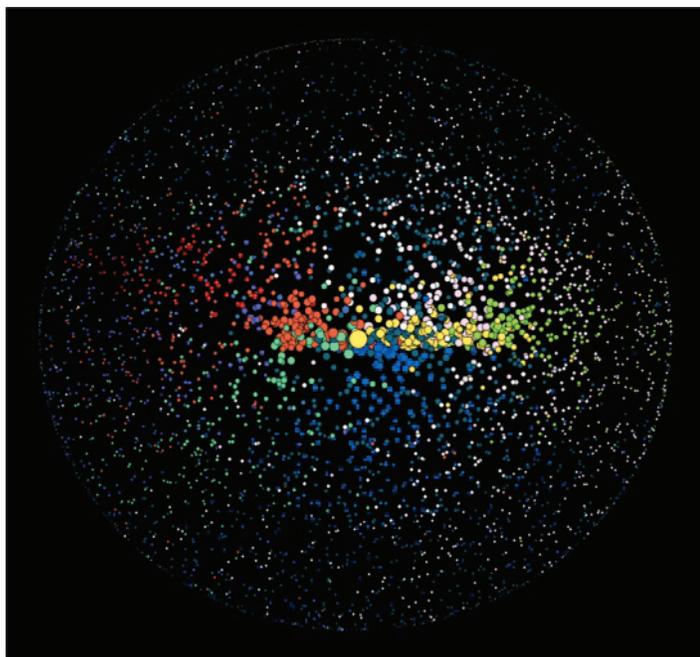
"These two, networks and communities, produce areas marked by common identity and coordinated practice within any larger network. And as a consequence of these areas, information does not travel uniformly throughout the network. It travels according to the local topology." —BROWN AND DUGUID⁸

figure 1. distribution of dynamic links among top 100 sites



Before looking at how different communities channel online attention, however, a baseline view of the whole is in order. Figure 1 shows the distribution of dynamic links over the past year (links in blog posts) from the ten thousand most highly linked English language blogs. On the left we see that the most popular outlinks (websites linked to by these blogs) account for a large proportion of the dynamic links from bloggers. A "long tail" of increasingly smaller players gathers the rest. The top 100 outlinks, of which only 24 are blogs, account for 37.6% of all dynamic links. Remarkably, the top 20 outlinks alone account for nearly a quarter (22.4%) of all dynamic links. And, the blogosphere channels the most attention to things besides blogs. Of the top 10,000 outlinks, only 40.5% are blogs, and these account for only 28.5% of dynamic links. In fact, the websites of legacy media firms are the strongest performers. The top ten mainstream media sites, led by nytimes.com, washingtonpost.com, and bbc.com, account for 10.9% of all dynamic links. By contrast, the top ten blogs account for only 3.2% of dynamic outlinks. And though the top ten web-native sites (blogs, Web 2.0, and online-only news and information sites combined) account for 10.8% of dynamic links, two-thirds of these (7.2% of total) are due to Wikipedia and YouTube alone. Legacy media institutions are clearly champion players in the blogosphere.

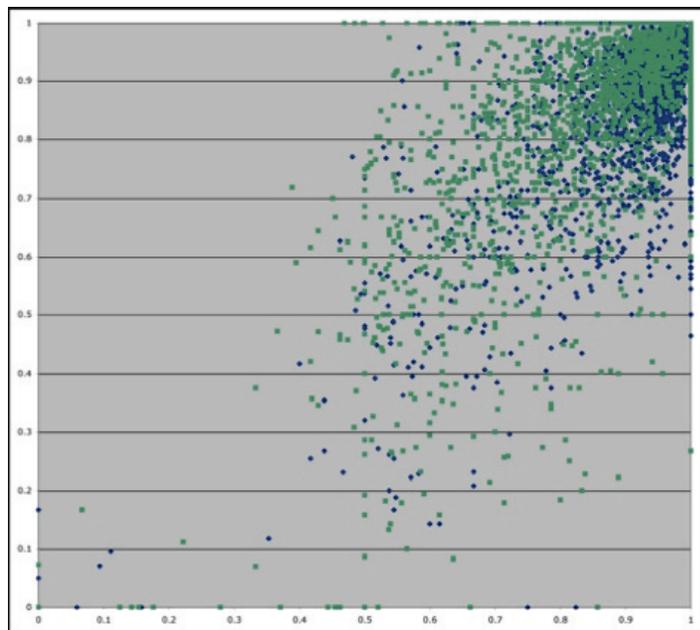
figure 2. co-citation network of links from top 10K bloggers



Another way to understand the role of MSM in the blogosphere's attention economy is to analyze the network of outlinks formed by co-citations. Co-citation analysis has been used to map the structure of scientific and scholarly disciplines,¹⁰ and similar approaches used in power structure research.¹¹ If we construct a network in which each node is an outlink, and each tie represents that one or more bloggers linked to both sites, we in essence draw a map representing the collective allocation of attention by the blogosphere. As figure 2 shows, the co-citation network of outlinks is highly centralized (unlike, as shown later, the social network map of the blogosphere itself). The large dot at the center of the map is *nytimes.com*, and other MSM websites are also clustered at the center of the map. Websites of niche interest to smaller numbers of bloggers are located farther from the center, in proximity to other sites favored by the same bloggers. The map shows how—despite the large number of interest-specific, niche sites on the Internet—websites of the legacy media, along with newer players like YouTube and Wikipedia, in fact form a locus of common attention for the blogosphere.

The fact that bloggers share a number of common targets of attention does not mean they lack divergent tendencies as well. Bloggers link preferentially to other bloggers who share common interests, and this tendency is especially pronounced for political bloggers. Figure 3

figure 3. in-link and out-links by political ideology



shows the strength of this preferential linking effect for political bloggers. Liberal (green) and Conservative (blue) political bloggers are plotted, with the y-axis representing the proportion of links they “send” to bloggers on the same side, and the x-axis showing the proportion of links received from the same side. Clearly, bloggers on both sides of the political axis have a strong tendency to link to their ideological friends. So both tendencies are present: blogs channel attention to common resources like the MSM as well as to divergent online resources (such as organizations, businesses, interest groups, niche publications, and other blogs).

BLOGS AND THE FABRIC OF HYPERLINKED ATTENTION

The blogosphere is not an undifferentiated mass, and therefore as a lens for social attention it is not monocular. It is often described as a kind of haystack, hierarchically organized with a famous A-list on top, and B–Z lists extending downward to a floor of complete obscurity. But the blogosphere has a complex and ordered network structure, formed by billions of individual choices by millions of bloggers about whom and what to link to. Large-scale regularities in these choices

result in pockets of network density around things people care about for one reason or another. These comprise informational communities in which ideas and information spread quickly. The preferences that lead clusters of bloggers to link to one another with disproportionate frequency also leads these clusters to link preferentially to other things, such as particular media sources or NGOs. Each one of these clusters is thus like a lens, focusing attention on particular sets of online resources.

By identifying some particular clusters of blogs and examining their relative frequencies of linking to large numbers of other websites (outlinks), we can observe this preferential linking phenomenon, and identify those sites that have particular influence among key communities of bloggers. This approach provides a method for qualitative understanding of the principles behind the formation of particular network clusters, as well as insights into the role of mainstream media, civil society organizations, and other actors in the “ecosystem” of online communications. Whether a blogger links to the *New York Times*, or YouTube, or Wikipedia reveals very little about his or her interests. At some point, the majority of the top 10,000 bloggers link to each of these three sites. But other, less dominant sites are preferred by particular clusters of bloggers, receiving a far greater proportion of links from them than random chance would allow. Studying the proportion of links from particular sets of bloggers shows the patterns of preference.

The English language blogosphere contains bloggers from across the world. There are native-speaking English bloggers from Britain, Australia, Canada, and New Zealand, for instance, and bilingual bloggers from every part of the world who for one reason or another choose to blog in English as well as, or instead of, their native tongue. The latter include members of diasporic or expatriate communities (e.g. many Iranian bloggers), bloggers seeking a global audience (e.g. many African bloggers), and members of networks of practice (e.g. software developers) which benefit from globally shared information. But the largest network structures found among English language weblogs are formed by American bloggers, and in particular political bloggers. Analyzing political blogs around the 2004 elections, Adamic and Glance¹² found a large network structure of blogs, clustered into two ideological groups (liberal and conservative), with most links occurring within clusters, but some across them. The current approach, which selects blogs for mapping on the basis of global network prominence (in-degree) without regard to any prior assignment

to thematic categories (e.g. political, parenting, technology), is able to locate these large political clusters as well as a number of other attentive clusters, which upon subsequent analysis prove to have their own thematic foci, including *technology*, *parenting*, *science/medicine*, *celebrity/entertainment*, *law* and *security/strategic foreign policy*.

figure 4. social network map of the English language blogosphere

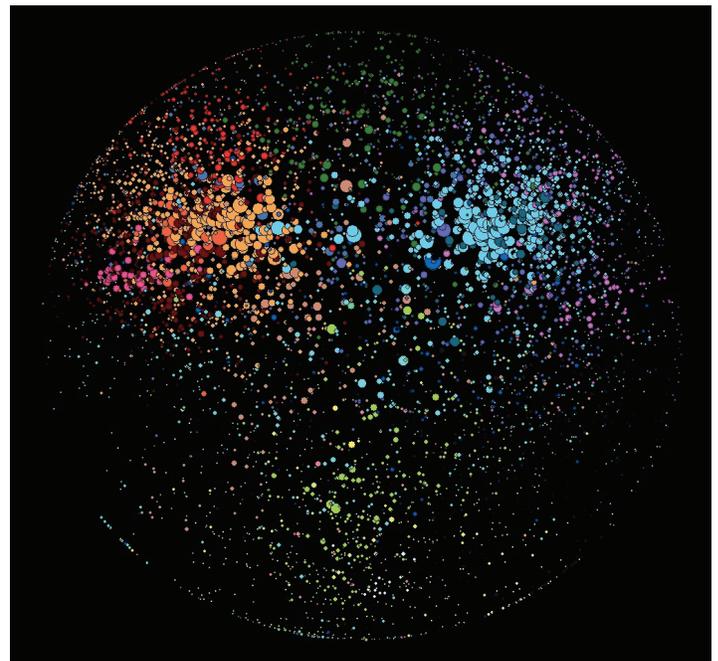


Figure 4 presents a social network diagram of the most highly cited (linked to) 8,000 weblogs in the English language blogosphere.¹³ The map uses a physics model algorithm¹⁴ to visually cluster weblogs, represented by dots, into network neighborhoods. In the map, each weblog is represented by a dot. The size of the dot is the number of other blogs which link to it, a measure of its prominence. A general force acts to move dots toward the circular border of the map, while a specific force pulls together every pair of weblogs connected by a link. In this way, the connected tissue of weblogs curdles into its more densely interlinked neighborhoods. The color of a dot represents its assignment to a particular *attentive cluster* based on its dynamic link history. Groups of blogs represented by the same color link to similar things, statistically speaking.

In this map we see the prominence of U.S. political discourse in the network. The large groups of reddish (conservative) and bluish (liberal) blogs are the most visible

concentrations on the map. To be clear, this does not mean that most English language blogs are political. Most are not. It means that the largest structures are political, which is to say that political discourse organizes more bloggers into densely linked network neighborhoods than any other topic of online discourse. Note that the liberal and conservative poles break down into a collection of different *attentive clusters*. These allow us to observe different tendencies and interests among bloggers on the same side of the political divide. Some of these clusters are easy to characterize, focusing clearly on such things as Middle East politics and a perceived clash of values with the Islamic world (on the conservative side), and identity politics (on the liberal side). Others are harder to put a label on, but seem to represent differences in principle areas of concern, such as social values vs. military/foreign policy issues (conservative) and local vs. “inside the Beltway” discourse (liberal). Both sides have a core group comprising recognized “A-list” bloggers and others who are more central in the network.

In addition to clearly political clusters, which are embedded in either *liberal* or *conservative* network poles, and non-political clusters, such as exist around technology and parenting, there are two attentive clusters that “straddle” both political poles and also have members outside the political structures. These are (1) law and (2) security. There are weblogs focused on legal matters on the political left and on the political right, whose link history profiles are nonetheless more similar to each other than to their own ideologically aligned cohort. The same is true for *security*, meaning foreign policy, strategic studies, and so on. Both of these clusters exist around elite specialists in fields with their own prominent publications and organizations.

LINK PREFERENCES OF ATTENTIVE CLUSTERS

Considering the range of themes that organize links in the blogosphere, politics may be unique in organizing meaningfully “bipolar” network structures, where ideological opponents form twin galaxies of contentious discourse. But, as important as politics are, most clusters of interest in the blogosphere (at least in English) are not oppositional in nature. In the blogosphere map used for this study, nonoppositional clusters form around such things as law, security, parenting, science and medicine, technology, and weblogs from the UK and

other English-speaking countries, among others. In addition to these, we can also look at particular attentive clusters within each political pole, and consider the individual preferences that distinguish them from the rest of the global network, including other clusters in the same ideological category. Attentive clusters of bloggers with similar outlink preferences can be detected wherever a large group of bloggers collect around a set of concerns or issues. Preference measurement requires comparison of the link behavior of these clusters with the rest of the network as a whole.

figure 5. group focus graph for law cluster

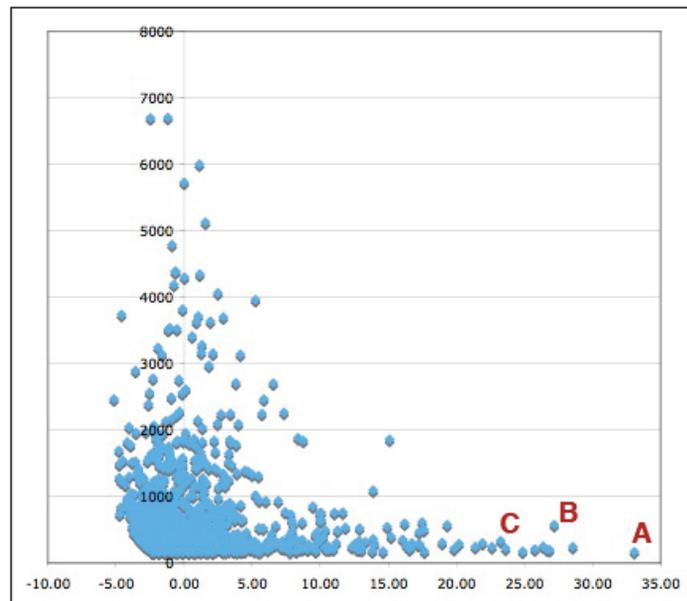


Figure 5 provides an example of a *group focus* graph. These graphs plot each outlink’s in-degree (total number of blogs in the entire map that cite it) on the y-axis, and a standardized measure of link density from a particular attentive cluster on the x-axis. The latter represents the degree to which the particular outlink is of disproportionate interest to the attentive cluster being analyzed, a measure we will call the *group focus index* (GFI). The higher the GFI on x, the more disproportionately attentive the cluster is to the node in question. A low GFI score indicates that the density of links from the profiled attentive cluster more closely matches the average density across the network. Nodes of general interest across most clusters, like YouTube and the *New York Times*, score low GFIs on most cluster profiles. In figure 5 we see scores for an attentive cluster focused on law, and some examples of websites with

high *GFI*s are indicated. The node marked *A* is “pawfsblawg.blogs.com,” a group blog authored by law professors at various universities. Nodes *B* and *C* indicate “papers.ssrn.com” (a site for downloading research papers) and “www.abanet.org” (the website of the American Bar Association), respectively. These examples show how this cluster of legal bloggers direct readers to blogs, organizations, and other online resources serving their particular network of professional practice.

All attentive clusters have preferred nodes. Figures 6 and 7 show *group focus* profiles for *celebrity/entertainment* and *science/medical* attentive clusters. For the celebrity-focused cluster, node *A* is “bestweekever.tv,” a blog-style site for a TV show reviewing celebrity and entertainment “news” and gossip. Similarly, node *B* is the blog-style news and gossip aggregator of the E! (Entertainment Television) network, a subsidiary of Comcast. Node *C* is “nymag.com,” the website of *New York Magazine*. If the law example shows how blogs can serve a network of practice, these examples show how they can serve a more traditional entertainment market segment as well, and create a strong feedback loop between bloggers and legacy media outlets. The collection of sites preferred by

the science/medical cluster shows it to be a sort of hybrid of the two. In figure 7, node *A* is “nature.com,” website of the leading science journal, which aggregates a professional and lay readership. Node *B* is “sciam.com,” website for *Scientific American*, and node *C* is “scienceblogs.com,” a collection of blogs on particular issues related to science. These resources serve both professional scientists and a broader audience of interested nonscientists, including educators. In addition to publications, nodes with high *GFI*s also include government websites (several at “nih.gov,” the National Institutes of Health, and at “fda.gov,” the Food and Drug Administration) and organizations (like “realclimate.org,” a group focused on “climate science from climate scientists”).

In addition to clusters that represent their own topic domains, clusters that are subsets of other meaningful groups, such as within the liberal and conservative poles of the political blogosphere, likewise have their own group focus profiles. They will share certain preferences with the rest of their ideological cohort, but in addition they will have nodes to which they are drawn because of the particular interests that define their subgroup.

figure 6. *celebrity/entertainment*

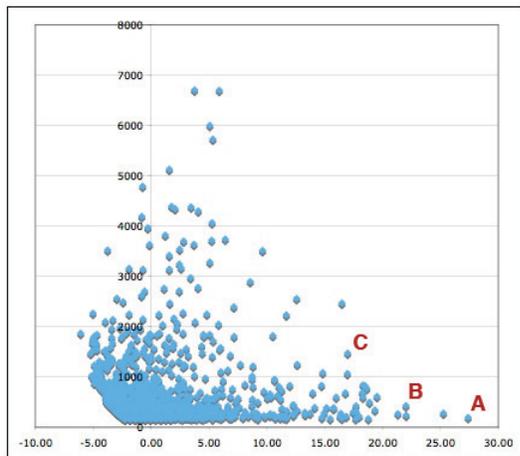


figure 7. *science/medical*

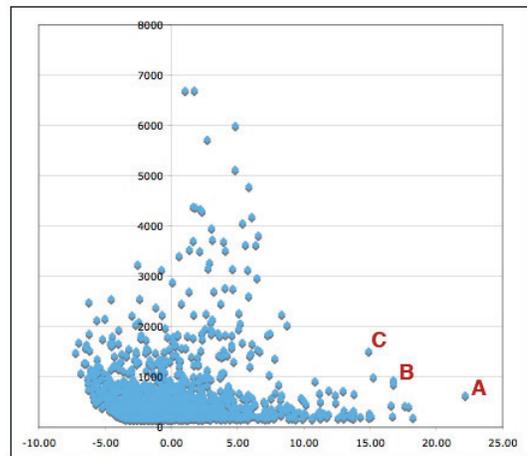


figure 8. Israel/ Islam

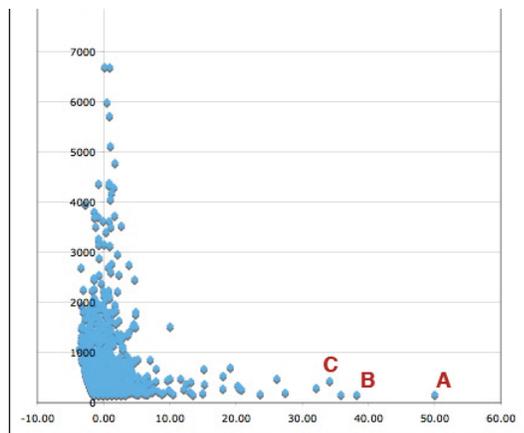
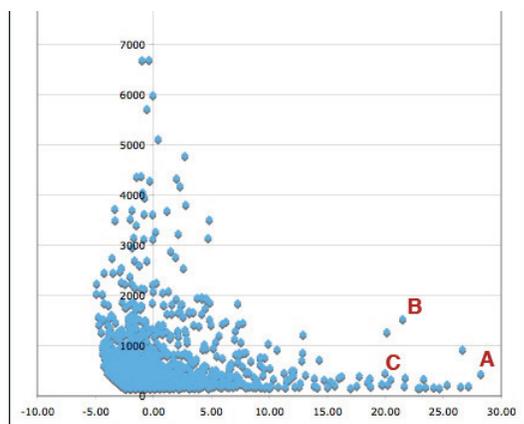


figure 9. identity politics



Figures 8 and 9 show profiles for subgroups of political attentive clusters, which are identifiable within larger conservative and liberal poles. Figure 8 shows the group focus profile for a conservative cluster focused mainly on Middle East politics, representing a strong pro-Israeli view and characterized also by claims about the dangers represented by Islam. Node A is “israelnationalnews.com,” a web-native site with English-language news about Israel. Node B is “jpost.com,” the English-language website of the *Jerusalem Post*. Node C is “danielpipes.org,” a blogger who follows the Middle East, but also looks globally (focus on U.S. and Europe) at issues of

cultural conflict between Islam and the West. Other nodes with high GFI for this cluster mainly include more Israeli news sites, and blogs focused on Islam (many far more strident than Daniel Pipes), with a particular interest in terrorism. In figure 9, node A is “brownfemipower.com,” a blog dealing with race and gender politics from a feminist perspective, is typical of many of the sites with high GFIs. Node B is “blog.iblamethepatriarchy.com,” and node C is “www.feministe.com,” both of which are in the same vein. The majority of nodes with high GFIs are feminist and racial identity-oriented blogs, though some organizations’ sites are included as well, such as “now.org” (the *National Organization for Women* website). One of the latter, “rhrealitycheck.org” (Reproductive Health Reality Check) calls itself “an online community and publication serving individuals and organizations committed to advancing sexual and reproductive health and rights,” and represents a type of organization mixing public communication, organizational partnerships, and political mobilization. This hybridization of “talk,” “organization,” and “mobilization” is characteristic of a growing class of actors in the networked public sphere, examples of how the walls between “media” and “civil society” are softening.

POLITICAL OUTLINK PREFERENCES: VALENCE AND POLITICIZATION

Although some sites mainly serve particular clusters, most receive at least some attention from various blogs across the network, and at the “middle range” between particular clusters and the network as a whole, there are important trends in the distribution of attention from blogs to media and civil society websites. Regarding questions about journalism and public affairs, political blogs are especially relevant. And because of their prominent role in the network, political blogs are particularly important drivers of collective attention. There are two key dimensions to this function. The first, more obvious, is tied to polarization between *liberal* and *conservative* blogs. Some nodes are strongly preferred by liberals, some by conservatives, and others receive attention from both. The proportion of links from one side vs. the other is referred to here as *political valence*. The second dimension, referred to here as *politicization*, is defined by the proportion of links from bloggers in political attentive clusters of either

side, versus those from nonpolitical attentive clusters. In other words, some outlinks are preferred by political bloggers in particular, and others by nonpolitical bloggers. If we look at the distribution of the most popular outlinks in these two dimensions, we can see how different clusters drive attention to different sites.

figure 10. politicization, valence for top 1000 news/info + NGO outlinks

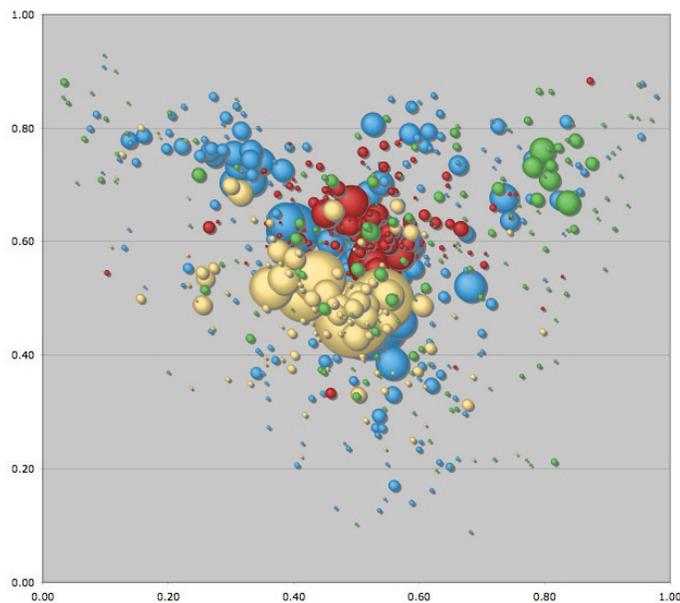


figure 11. in-degree and skew for news/info + NGO outlinks

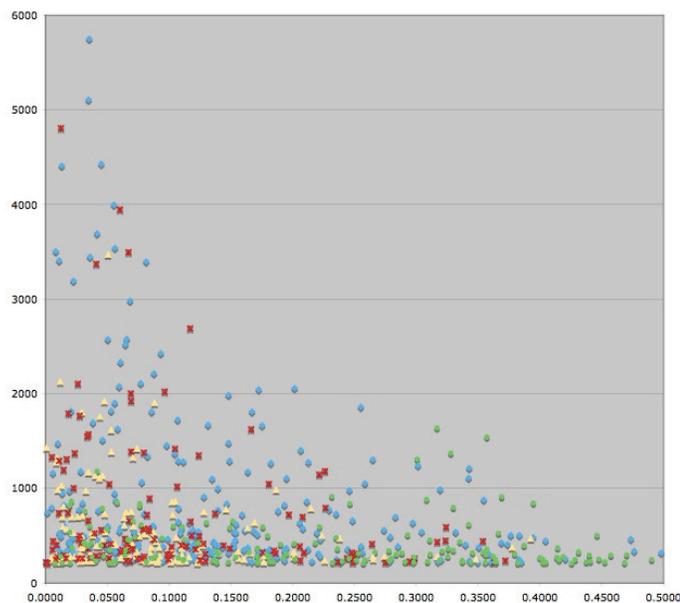


Figure 10 plots the top 1,000 outlinks in a space defined by *politicization* (y-axis) and *political valence* (x-axis). The distribution reveals, unsurprisingly, that nodes disproportionately of interest to political bloggers tend to be more ideologically polarized than those of more general interest across the network. That said, there are politicized nodes that receive equal interest from liberals and conservatives, and some nodes with more general appeal that nonetheless have an ideological skew in terms of the political bloggers they do attract.

The process of *selective exposure*¹⁵ naturally leads bloggers with strong political preferences to choose ideologically “friendly” sites to link to most often. This individual-level behavior has macro-level implications for the way various classes of online resources are drawn upon by bloggers, and these patterns reveal how new categories of actors are joining old ones in the public sphere. We can for instance distinguish between news and information websites, on the one hand, and NGO/advocacy websites on the other. Figure 10 presents NGOs (green), along with three categories of news and information site: (a) US national/global (blue), (b) US local/city/state (red), and (c) foreign (yellow). Observing the graph, several points stand out:

- Liberal bloggers link more frequently to organization sites than do conservatives.
- In a pattern that is nearly a mirror image of the role of NGOs for liberals, conservative bloggers are served by politicized news/information sites.
- With a handful of exceptions, most local news and information sites receive a disproportionate number of links from political bloggers (high politicization), and yet these tend to be balanced in the number of links from left and right.
- Foreign news sources tend to be less politicized, which is largely a function of high interest among the UK/Aus/NZ cluster, which is not counted among the political poles. However, they tend to skew conservative. There are a number of foreign news and information sites (mainly Israeli and conservative British press), that are frequently cited by conservative bloggers.

We can further clarify this difference between NGOs and types of news and information sites by calculating an additional measure, *skew*, defined as the absolute value of the difference

between a node's valence score and the expected valence score based on equal chances of being linked by liberals or conservatives. In other words, how politically “unbalanced” is the attention a node receives.

table 1. average scores by category

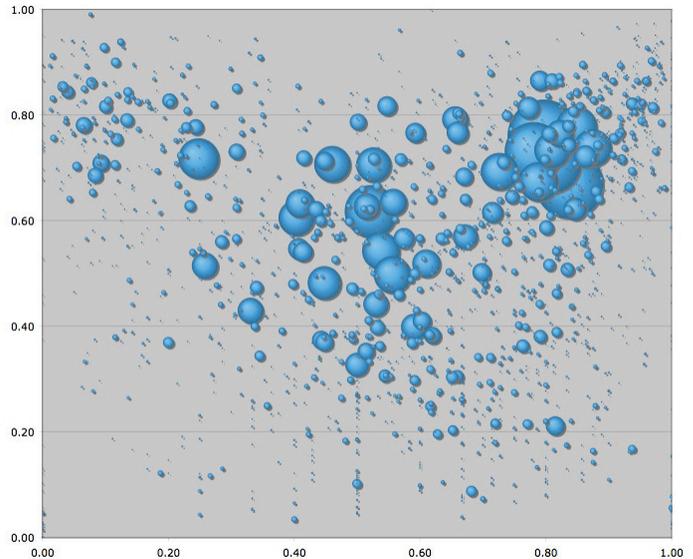
| | skew | polit | aveVal |
|-------------|-------|-------|--------|
| NGOs (t10K) | 0.267 | 0.537 | 0.58 |
| NGOs (t1K) | 0.226 | 0.604 | 0.54 |
| Media: NAT | 0.139 | 0.578 | 0.50 |
| Media: LOC | 0.086 | 0.620 | 0.52 |
| Media: FOR | 0.109 | 0.488 | 0.44 |

Figure 11 charts the *skew* and *in-degree* of the same sets of outlinks discussed previously. Here the tendency of organizational sites (green) to be more skewed is clear. Mean values for skew, politicization, and valence are shown (table 1) for the four categories above, drawn from among the top 1000 outlinks, as well as all *.org* nodes (1579 in all) from the top 10,000 outlinks. Organization sites are clearly more politically skewed than news and information sites (including the MSM), and their valence tilts liberal. Local sites are the least skewed, and yet the most politicized, which goes against the general trend. A possibility is that local sites are rarely ideologically tilted, and yet are of high value to politically attentive people, that is, *newshounds* who pay attention to news at the local level with similar alacrity as to national or global levels. Finally, foreign news sites have a low skew and politicization, but what tilt they do have is in the conservative direction as noted above. This is attributable largely to a conservative preference for information sites focused on Middle East politics, terrorism and perceived dangers of Islamic radicalism.

BLURRING BOUNDARIES: ORGANIZATIONS ONLINE

The data in figure 12 and table 1 indicate that a new class of communicative actors, mainly NGOs and special purpose news and information sites, are linked by specialized (in this case, politicized) sets of bloggers, while the media in general hold a more central position in the attention economy of the

figure 12. organization (*.org*, some *.net*) outlinks among top 10K outlinks



blogosphere. Figure 12 shows the position of organization websites from among the top 10,000 outlinks, in the same political valence space define earlier. Though they are found across the space, the liberal side of the blogosphere interacts more heavily with this growing field of civil society actors, a finding consistent with the frequently heard claim that the liberal side of the political spectrum features more bottom-up, grass roots organization. A number of these liberal *.org* sites are little different than ideologically opposite versions of the politicized news and information site serving conservatives. Popular sites like commondreams.org are not-for-profits that provide alternative news sources for bloggers on the political Left. Others though represent social causes (e.g., [Americans United for Separation of Church and State](http://AmericansUnited.org)) through political organizing as well as participation in public communication via the blogosphere. And others exist mainly to provide specialized information to inform public debate: dots putting themselves forward for the world to connect, like the Iraq Coalition Casualties Count (<http://icasualties.org>).

LEGACY MEDIA AND NEW MEDIA

table 2. average scores for media subcategories

| SCOPE | MEDIUM | TYPE | VAL | POL | SKEW |
|----------|-------------|-------------|-------|-------|-------|
| local | other | other | 0.457 | 0.571 | 0.027 |
| national | broadcast | TV/air | 0.453 | 0.595 | 0.048 |
| local | online only | online only | 0.534 | 0.614 | 0.073 |
| national | broadcast | radio | 0.427 | 0.667 | 0.073 |
| local | broadcast | TV/air | 0.421 | 0.652 | 0.074 |
| local | broadcast | TV/cable | 0.463 | 0.543 | 0.089 |
| local | print | newspaper | 0.540 | 0.620 | 0.093 |
| national | broadcast | TV/cable | 0.464 | 0.563 | 0.108 |
| national | print | newspaper | 0.496 | 0.611 | 0.124 |
| local | print | magazine | 0.530 | 0.590 | 0.138 |
| national | print | magazine | 0.520 | 0.562 | 0.140 |
| national | print | other | 0.551 | 0.570 | 0.152 |
| national | online only | online only | 0.469 | 0.583 | 0.162 |

A closer look at the news and information sites provides greater resolution on the role of the media in the blogosphere. Figure 13 shows national-level U.S. news and information sites, including the websites of legacy media outlets, in the following categories: broadcast (blue), newspapers (red), magazines (yellow), and web-native (green). Figure 14 shows local (municipal and state-level) media: broadcast (blue), newspaper (red), and online-only (yellow). Table 2 provides additional detail on media subcategories. At a glance, the

major trends are obvious. Local media, dominated by newspaper sites, is far more uniformly centrist than national-level media. Because there are also a lot of centrist national sites, this is just to say that national media contain a great many more politically polarized sites than operate locally. At the national level, broadcast entities are the least politically skewed, followed by newspapers. These media function as they do off-line, as “general-interest intermediaries” drawing a range of readers/viewers from across the political spectrum. Magazine sites are more skewed, mirroring print magazines’ greater specialization. And web-native media are the most skewed of all forms of news and information website. We see the essential pattern again: legacy media hold the center, online only media fray the edges.

DISCUSSION AND CONCLUSIONS

Are blogs and web-native media making old-style institutional journalism obsolete? The question has several faces. At the commercial level, institutional journalism is threatened by the Internet, both in the form of “citizen media” taking its advertising-earning eyeballs, and online “classifieds” taking its rents on informal markets. At the genre level, the integrity and validity of “objective” journalism and responsible expert opinion is contrasted to the more slippery and uncertified forms of online content found in blogs, YouTube, and other user-generated content. At the level of professional practice,

figure 13. national media

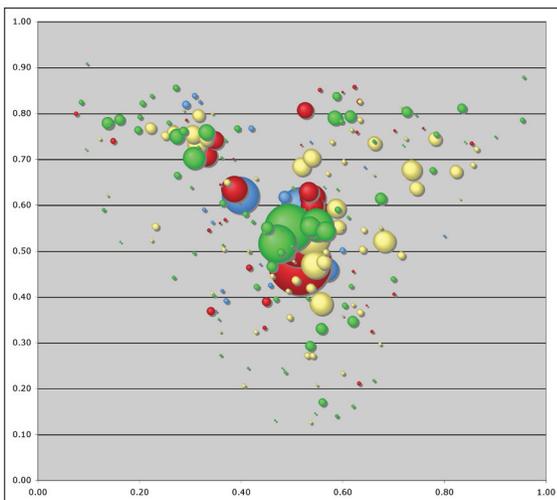
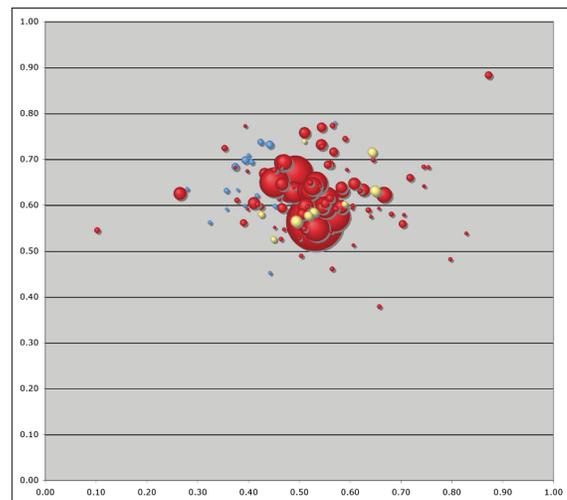


figure 14. local media



journalists and bloggers argue over values of professionalism, independence, legal protection, and legitimacy as vessels of the public trust. But the picture is more complicated than the story of opposition normally lets on. Most links from blogs are not to other blogs, but to a range of online sites among which MSM outlets are the most prominent. In addition, journalists are keenly attentive to blogs, often mining them for story leads and background research. Furthermore, the blogosphere is becoming as important as the front page of the paper for landing eyeballs on a journalist's article. There is a cycle of attention between blogs and the MSM, in which the MSM uses the blogosphere as a type of grist for the mill, and the blogosphere channels attention back to the MSM. Indeed, it is becoming clear that the blogosphere and MSM are complementary players in an emerging system of public communications, which Yochai Benkler refers to as the *networked public sphere*.¹⁶

Benkler proposes a model in which the networked public sphere, supplementing the older "hub and spoke" industrial model represented by the mass media, will alter the dynamics of key social communications processes. The mass media model, in which the ability to communicate publicly requires access to vast capital or state authority, has resulted in elite control over the power to frame issues and set the public agenda. What ends up in the newspaper usually starts with a government source or professional media advocate in the employ of some or another interested organization. In Benkler's view, a new, vastly distributed network of public discourse will supplement or supplant this elite-driven process. The networked public sphere will allow any point of view to be expressed (universal intake), and to the extent it is interesting to others, it will be carried upward (or engaged more widely) via a process of collective filtration. The extended network will contain its specialty subnets (analogous to *interest publics*), and its general-interest brokers (analogous to the *attentive public*), among others. This *neural network*-like system might potentially provide a much more stable and effective foundation for democratic social action than the established commercial media system it challenges.

A goal of the present study is to contribute to a way forward for understanding some emerging properties of the networked public sphere. The Benkler model suggests hierarchies and substructures, forming around interested and knowledgeable discussants, aggregating and mixing somehow via larger structures, ultimately brokering access to centralized

organs of public awareness, found in government and surviving mass media. The findings here support Benkler's basic conception, and the methods may form building blocks for the study of particular examples of discursive and agenda setting functions at work. The ability to decompose large structures into smaller ones, and to know the particular informational and organizational links preferred by all of them, could be key to this endeavor.

The previous analyses have demonstrated that particular subnetworks of the blogosphere can be discerned based on the linking preferences of bloggers, and their preferences measured in a way that reveals online resources these groups prefer. The implication is that bloggers' aggregate preferences serve to focus the attention of readers onto certain online resources in an extended ecology that uses collective social intelligence to match information to interests. The particular methods of measurement explored herein point toward a way to map in detail how in this way the blogosphere acts as a multifocal lens of collective attention. Interest among bloggers creates network neighborhoods that channel attention to relevant online content. Discovery and analysis of these provides the promise of empirical exploration of new and critical ideas about the dynamics of the networked public sphere.

Even at this early stage though, there are observations to make about the interplay between new and old public sphere architectures, or more concretely, between blogs and legacy media. First, the current analysis indicates a strong symbiosis between the blogosphere and established commercial players of the mainstream media. Legacy media entities are at the center of attention across the blogosphere, continuing to fulfill the role they have aspired to in the past: to be general interest intermediaries at the crossroads of public discourse. There is nothing in the actual behavior of bloggers to suggest this role would diminish on account of lack of demand for this social function. The media's business model problems are of course another matter entirely, but at this stage it looks safe to say that blogs do not make commercial journalism obsolete, least of all in the eyes of bloggers (regardless of what some of them say about the matter). If anything, the central role of professional journalism in the expanded economy of political discourse makes it valuable in new ways, and to the extent its near-monopoly on agenda setting and public representation is broken, its role as an honest broker of verified information becomes yet more important.

Second, the growing networked public sphere is not just changing the relationship among actors in the political landscape: it is changing the kinds of actors found there, and changing what “media” is actually doing. Some of this is easy to see. Ten years ago there were no bloggers and now they are considered a formidable force in public affairs. The established media are changing as well. Newspapers and other online publishers have explicitly added blogs to their offerings, and transformed the way general articles are published to seem more and more blog-like (e.g. hyperlinks, reader comments, embedded video). Bloggers on legacy media websites have quickly gained prominence, and some media companies have found great success via blogging. For instance, most people outside the Beltway think of [The Politico](#) as a website, not a Capitol Hill newspaper. As blogging and online media genres evolve, “blog” vs. “mainstream media” is becoming purely a cultural, or perhaps commercial distinction, and not one of format.

Some of these changes are subtler, however, and will take a long time to play out. If the center of the outlink network is anchored (with a hand from YouTube and Wikipedia) by evolving versions of the MSM, the space from the fringes inward is filling with a rich assortment of actors, including bloggers, grass-roots organizations, niche publications, commercial firms, advocacy groups, and many others. Many of these actors are essentially new or radically transforming from older selves. Organizations like MoveOn arise from nowhere, as older advocacy organizations struggle to retool for a communications environment that is changing fast. The mingling of citizens, organizations, publishers, parties and others in a shared, hyperlinked, globally visible, and reciprocal communications space is quickly changing a lot of these participants’ game plans, just as e-commerce upset a lot of corporate apple carts a decade earlier. The resulting hypertext corpus and its topologically complex anthill of contributors constitute a new mode of knowledge production, opinion formation, and social mobilization that will grow to interface with established democratic institutions, particularly journalism, in ways we cannot fully predict.

The justification for the journalistic *ancien régime* rests not on a divine right of reporters to be employed, but upon a set of social functions ascribed to the profession and taken to be in the public interest. These functions, viz. nourishing an informed electorate and maintaining a trading zone for competing ideas, values, and proposals for action, persist as core aspirations of the profession. This is despite

considerable evidence that large swaths of the general public care little and know less about their governance than virtually anyone but unabashed oligarchs would wish. Criticism leveled at commercial journalism often references this presumed weakness in the demand side of the marketplace of ideas. The shift from “hard” to “soft” news, over-attention to celebrities, the demise of investigative reporting, sound-bite “debates,” horse-race political coverage, and other ills are attributed to the squeeze put on journalistic producers by the difficulty of finding an audience that will pay attention to (thus getting advertisers to pay for the production of) anything else. And yet the rapid expansion of the blogosphere, particularly around politics, has shown that there is a huge appetite for political information among at least part of the population. The blogosphere’s boosters tend to see evidence here of the superiority of their nascent medium. If in blogs we find more information, about more issues, with more diversity of voices than ever heard in the MSM, why mourn the closing of newspapers and the dwindling of broadcast news audiences?

One argument is that the MSM form a locus of collective attention, where citizens are exposed to differing views on a common index of issues, and that the danger of losing this mainstream arena is that individuals will retract into irreconcilable redoubts of the like-minded, and the central marketplace of ideas fades away.¹⁷ There is some evidence supporting this fear. As shown earlier, there is a strong tendency among bloggers to link to other bloggers with similar interests and beliefs, particularly around politics. Other research shows convincingly that (a) most people’s social networks are relatively homogenous with respect to political beliefs and attitudes,¹⁸ and (b) to the extent that people are exposed to opposing viewpoints, it is primarily through MSM.¹⁹ And so it is not unreasonable to fear that the centrifugal force exerted by hundreds of thousands of bloggers will sunder a public sphere long held together by journalistic institutions. The way we envision the problem though reveals just how thoroughly the mass media model of society, featuring atomized consumers feeding at common troughs, grounds our imagination. But, to quote David Weinberger:

We’re not being atomized. We’re molecularizing, forming groups that create a local culture. What’s happening falls between the expertise of the men in the editorial boardroom and the “wisdom of crowds.” It is the wisdom of groups, employing

social expertise, by which the connections among people help to guide what the group learns and knows.²⁰

Weinberger goes on to question the survivability of institutions like the *New York Times* and Associated Press. As this analysis demonstrates, the question of how blogs are affecting the public sphere is not a straightforward matter of whether they undermine the MSM's ability to provide a platform for public agenda-setting and exposure to cross-cutting political views. The full story is deeper and more nuanced. While the Internet, vivified by blogs, fractures the landscape of public discourse across a great many new actors, a core activity of bloggers is to focus attention back to the MSM, particularly to institutional journalism. The structured tissue of bloggers, each not a voice in the woods but a member of cross-cutting communities, creates a new medium of social knowing, but one which so far appears favorable to the presence of the kinds of high-visibility, central platforms represented by legacy media institutions.

John Kelly is the founder and lead scientist of Morningside Analytics. His research blends social network analysis, content analysis, and statistics to solve the problem of making complex online networks visible and understandable. John has an M.Phil. from Columbia University (Ph.D. pending), and has studied communications at Stanford and at Oxford's Internet Institute. He is an Affiliate at the Berkman Center for Internet and Society at Harvard University.

ENDNOTES

- ¹ Carrington, P.J., J. Scott, and S. Wasserman, *Models and methods in social network analysis. Structural analysis in the social sciences*; 2005, Cambridge; New York: Cambridge University Press.
- ² Benkler, Y., *The wealth of networks how social production transforms markets and freedom*. 2006, New Haven: Yale University Press.
- ³ Fischer, C.S., *America calling : a social history of the telephone to 1940*. 1992, Berkeley: University of California Press.
- ⁴ Marvin, C., *When old technologies were new: thinking about electric communication in the late nineteenth century*. 1988, New York: Oxford University Press.
- ⁵ Dunbar, R.I.M., *Grooming, gossip, and the evolution of language*. 1996, London: Faber and Faber.
- ⁶ Katz, E., P.F. Lazarsfeld, and Columbia University. Bureau of Applied Social Research., *Personal influence; the part played by people in the flow of mass communications. Foundations of communications research*. 1955, Glencoe, IL.; Free Press.
- ⁷ Brown, J.S. and P. Duguid, *Knowledge and Organization: A Social-Practice Perspective*. *Organization Science*, 2001. Vol. 12(2): p. 19–213.
- ⁸ Brown, J.S., P. Duguid, and NetLibrary Inc., *The social life of information*. 2000, Harvard Business School Press: Boston.
- ⁹ Weinberger, D., *Everything is miscellaneous: the power of the new digital disorder*. 1st ed. 2007, New York: Times Books.
- ¹⁰ Crane, D., *Invisible colleges; diffusion of knowledge in scientific communities*. 1972, Chicago: University of Chicago Press.
- ¹¹ Kerbo, H.R. and L.R.D. Fave, *The Empirical Side of the Power Elite Debate: An Assessment and Critique of Recent Research*. *The Sociological Quarterly*, 1979. 20(1): p. 5–22.
- ¹² Adamic, L. and N. Glance, *The Political Blogosphere and the 2004 U.S. Election: Divided They Blog*. *BlogPulse 2005*. <http://www.blogpulse.com/papers/2005/AdamicGlanceBlogWWW.pdf>.
- ¹³ *Weblog data courtesy Morningside Analytics*. 2008, Morningside Analytics: New York.
- ¹⁴ Fruchterman, T.M.J. and E.M. Reingold, *Graph Drawing by Force-directed Placement*. *Software—Practice and Experience*, 1991. Vol. 21(1 1): p. 1129–1164.
- ¹⁵ Sears, D.O.a.J.F., *Selective Exposure to Information: A Critical Review*. *Public Opinion Quarterly*, 1967(31): p. 19–213.
- ¹⁶ Benkler, Y., *The wealth of networks how social production transforms markets and freedom*. 2006, New Haven: Yale University Press.
- ¹⁷ Sunstein, C.R., *Republic.com*. 2001, Princeton N.J.: Princeton University Press.
- ¹⁸ Mutz, D.C., *The Consequences of Cross-Cutting Networks for Political Participation*. *American Journal of Political Science*, 2002. Vol.46 (No. 4): p. 838–855.
- ¹⁹ Mutz, D.C.a.P.S.M., *Facilitating Communication across Lines of Political Difference*. *American Political Science Review*, 2001. Vol. 95 (No. 1): p. 97–114.
- ²⁰ Weinberger, D., *Everything is miscellaneous : the power of the new digital disorder*. 1st ed. 2007, New York: Times Books.