

Feast or Famine in the Public Sphere?

A Content Analysis of Links Shared in Civic Conversations on Reddit

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Abstract

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It is axiomatic that a functional public sphere depends on quality information, and the traditional source of that information has been legacy news media, most particularly major metro newspapers. The ongoing contraction of the legacy media has led to concerns for the public sphere. A frequent prescription is to either bolster legacy media or enrich the information environment by incubating alternative forms of news media or expanding access to non-mediated information sources such as government data. However, little research has been done to investigate what citizens actually use as sources of civic information for public sphere discourse. In this case study of Seattle's civic information consumption habits, I conduct a content analysis of links posted in discussions of local civic matters drawn from civic conversations on Seattle's subReddit r/Seattle to see what information from Seattle's civic information ecology discussants are citing, re-posting and referencing. Findings show that Seattle Reddit users rely far more on alternative media sources and non-mediated sources, especially government data, than they do on legacy media, but legacy media still sets the conversation agenda.

Keywords: public sphere, legacy news media, public affairs journalism, citizen journalism, blogs, news media

Feast or Famine in the Public Sphere?

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As major daily newspapers continue a decades long decline in the United States, scholars worry that a dearth of public affairs journalism could leave democracy vulnerable to an information famine that could undermine the ability of people to self-govern (see Schulhofer-Wohl & Garrido, 2009). The public sphere as Habermas (1989, 2006) influentially described it is the product of discursive activity across a variety of forums in which a well-informed people deliberate about public affairs and formulate public opinion that ultimately guides government policy. Through the modern era the public sphere relied on news media for information on public affairs, most importantly newspapers (Waldman, 2011), but the newspaper industry is in decline, leading to reductions in the amount of public affairs journalism available to citizens. Yet since the advent of the internet, information sources in general have flourished, leading a body of scholars to propose that the growth in the information ecosphere could offset losses in public affairs journalism.

The bulk of scholarship on the impact of the losses of public affairs journalism focuses on the production of public affairs journalism; the reasons it is in decline, what remedies might correct for the losses, and the potential implications of the losses for the public sphere. Very little scholarship examines the impact of loss of public affairs journalism from the perspective of the audience, most particularly that politically interested portion of the media audience that comprises the public sphere. This gap in the scholarship is problematic because in focusing on a

single aspect of the condition of the public sphere—the welfare of its historic information source—it ignores the complexity of the media environment, and the desires and choices of the information consumer.

This research addresses that gap in the scholarship by undertaking a case study of the public affairs information consumption habits of people who discuss public affairs online in Seattle, specifically on the topical Reddit site, or subReddit, r/Seattle. I examined a sample of 1781 links drawn from two years' worth of conversations on civic matters on r/Seattle to learn to what sources people post links, what topics they use those links to address, for what purposes those links are posted, and what “Redditors,” or Reddit users, consider good sources of evidence in support of their claims. I found that participants in the Seattle public sphere link to legacy media sources only about a fifth of the time, less than they do to alternative media and non-mediated information sources. Redditors also link to a vast array of information sources, but tend to focus on a narrow range of conversation topics. Legacy media still serve an agenda-setting function in Seattle, with almost half of all links that set the conversation topic linking to legacy sources. Seattle Redditors often act as reporters, seeking information from non-mediated sources such as government and commercial sources, and sharing eye-witness pictures and video.

Investigating the electronic public sphere

The decline of traditional news media has been well documented. In brief, the traditional business model of the American newspaper is failing. Competition for advertising cut newspaper ad revenue by half in the last 12 years, newspaper staff has shrunk by a quarter, and submissions for Pulitzer prizes since 1984 suggest that newspapers have cut public service journalism by as much as 43% (Waldman, 2011). Television news, newsmagazines, and news radio have experienced similar trends (Waldman, 2011). The result has been a reduction in news content,

coverage, and especially news content that is expensive to produce, which includes investigative journalism, which has long held the role of watchdog over the government (Waldman, 2011). Newspapers have also historically provided public affairs journalism as a form of public service, subsidizing that less popular but important coverage with revenue from more widely read sections of the paper, such as sports (Boczkowski & Mitchelstein, 2013). As revenues decline, newspapers are in many cases choosing to cut back on less profitable coverage.

Following Habermas (1989), democracy depends on the existence of a robust public sphere, a discursive space between home, government and the market in which citizens reason together toward consensus on matters of the public good. Habermas attributed the emergence of European democracies in part to the rise of the press, because key to the efficacy of the public sphere was an informed populace. Though many of the tenets of Habermas' theory of the public sphere have been challenged (Benhabib, 1992; Calhoun, 1992; Fraser, 1992; Schudson, 1992), most public sphere theorists agree that democratic government does require the presence of a public sphere in which adequately informed citizens can engage in debate about matters of the public good (Brundidge, 2010; Chambers, 2003; Delli Carpini, Cook, & Jacobs, 2004; Mutz, 2002). The primary supplier of quality information for most of the history of the public sphere has been the newspaper, with television and radio eventually playing a secondary role as providers of less in-depth but widely broadcast news (Friedland, 2014; Waldman, 2011). The newspaper more or less informed and set the discussion agenda for its community, and the community held those discussions in public meetings, informal social gatherings, letters to the editor, and civic organizations (Friedland, 2014; Putnam, 2000). As newspapers and other legacy news media produce less public affairs journalism, many have expressed concern that the basic needs of democracy will no longer be met (Waldman, 2011).

Declines in investigative reporting have increased opportunities for political corruption and have reduced the comprehensiveness and political utility of community coverage (Waldman, 2011). Research has found that legacy media cuts have left gaps in coverage on specific topics, including schools, the environment, health, and business. (Beam, Brownlee, Weaver, & Di Cicco, 2009; Napoli, Stonbely, McCollough, & Renninger, 2016; Waldman, 2011). Bennett and Iyengar (2008) raise the possibility that people will bypass ever-shrinking objective news sources in favor of partisan sources of questionable accuracy with which to “ornament their opinions” (p. 721). Others fear that increases in journalism in other sectors such as blogs and websites may be too numerous and difficult to find and sort to offset legacy media losses (Kovach & Rosenstiel, 2011). Some evidence suggests that an increase in news outlets conceals the ongoing dependence of the public sphere on legacy sources. For example, in spite of a proliferation of alternative media sources in Baltimore, a Pew Research Center (2010) study that tracked six news stories across every news media outlet in Baltimore found that the vast majority of the information found within all the media outlet’s content originated from local legacy media, primarily daily newspaper the *Baltimore Sun*. Also, legacy media historically furnished the vast majority of media consumers with a comprehensive, homogenous and putatively objective selection of civic information, to at least some extent putting a comprehensive array of pertinent public sphere information on the conversation agenda (McCombs & Shaw, 1972). Finally, Hadge (2011) notes that legacy media often fail to provide the information about neighborhoods that can help foster community identity, such as that about events and community resources.

Various actors have proposed or attempted to address the growing dearth of civic information provided by news media either by seeking to preserve news media or by enriching the civic information ecology by alternative means. Some have tried to identify business model

remedies for legacy news such as a nonprofit, government funded model (Downie, Jr. & Schudson, 2009); paywalling (Duprey, 2012); or selling data, providing consulting services, and diversifying revenue streams (Rosenstiel, Jurkowitz, & Ji, 2012). Others have looked to alternative media for potential sources of information useful to the public sphere. Schaffer (2007) and Hadge (2011) raise hopes that hyperlocal journalism, which typically adheres to legacy news media standards of objectivity, may fill some gaps in shrinking legacy media coverage by providing news on politics and crime and community-building information on things like events and real estate. Harcup (2011) and others point to a growing role for alternative and activist journalism to add to the diversity of voices informing the public sphere. Benkler (2006) is optimistic about the potential for citizen journalists such as bloggers to provide information free from some of the worst weaknesses of mass media, such as the influence of advertisers and power. Bennett and Iyengar (2008) hypothesize that audiences, especially younger people, may be cynical about political campaigns carried out in traditional media, but receptive to new forms of campaign communication. Powers (2013) has called attention to the growing role of non-governmental organizations as information producers that may help put social justice issues on the public agenda, but notes that some theorists fear may be biased and overly driven by single agendas.

Other theorists believe that more access to non-mediated information could help citizens reduce the need for information arbiters such as legacy news media and find and interpret civic information for themselves and each other. Friedland (2014) proposed that enriching the civic information ecology with easily accessed open government records could allow people to conduct their own inquiries and disseminate useful information. Benkler (2013) also argued that

citizens can peer-produce journalism in real time in response to emergent social issues and situations as public sphere discussants crowdsource relevant information.

These optimistic theorists may be correct that these new information sources are beneficial to the public sphere, but the research done to assess its efficacy tends to stop at production. When scholars research the ongoing evolution (or devolution) of the information ecology, they tend to proceed to points of information production to see how well they are doing at putting forth information (Boczkowski & Mitchelstein, 2013; Friedland, 2014; Mitchelstein & Boczkowski, 2009; Usher, 2014). These studies are predicated on the assumption that the production of information will be sufficient to nourish the public sphere. Information production, however, can only nourish the public sphere to the extent that people consume the information produced. What is missing in assessments of the functionality of a civic information ecology is examination of that ecology at the point of information consumption. Information becomes relevant to the public sphere only when people interested in public affairs encounter it, trust it, and share it. It is that gap that this study of Seattle's civic information consumers addresses.

Seattle has one of the most advanced civic information ecologies in the nation (Fancher, 2011; Friedland, 2014), and as such, is a useful site to examine how citizens do or do not make use of information available from sources other than legacy media, and therefore, the degree to which Seattle's public sphere is resistant to legacy news media contraction. As Fancher (2011) notes, Seattle has lost a considerable amount of legacy news media; since 2007 it has lost two of its three daily print newspapers. But the city's alternate information sources have flourished. There are a large number of online media devoted to neighborhoods, issues, and interests (Kim, 2015). Hyperlocal and city region sites and "pure players" or online-only news producers, abound (Fancher, 2011; Friedland, 2014), including the online-only West Seattle Blog, one of

the nation's most successful pure players. The city of Seattle has also expended a significant amount of resources to put a great deal of civic information online, and to facilitate access to computers and training to use them for people at all socioeconomic levels to maximize public access to that information (Friedland, 2014).

Seattle also has what appears to be a robust public sphere. By several measures of civic engagement, including volunteerism, engagement in non-election political action, financial donations, group membership, and talking with friends and family on the internet, Seattle is ahead of the nation on every measure but membership in religious institutions (*Seattle City Club*, 2014). Seventeen percent of Seattle residents had visited or contacted a public official within the previous six years, ranking Seattle sixth in the nation among metropolitan areas. Seattle is also more electronically networked than most cities; 88 percent of Seattle residents had a computer in the home, and 89 percent had a mobile phone as of 2014.

It is more difficult to discern the extent to which Seattle residents participate in online discussion of local civic matters. About eight percent of area residents report discussing politics online *regularly*, on a par with national averages (*Seattle City Club*, 2014). Unfortunately, there is no research on what percent of Seattle residents participate in *occasional* political discourse online. Nationally, 39 percent of citizens and 66 percent of social media users report having engaged in political behavior on social media at least once (Smith, 2013). Accepting those averages would mean that more than 51,000 of Seattle's 662,000 residents regularly have political discussions online and about 258,000 people have at least once engaged in public sphere discussion on social media platforms, with the number that occasionally discuss politics online presumably falling somewhere in the middle.

There is some evidence to suggest that Seattle's overall level of online civic discussion may even exceed national averages, given the density of its community blogs, forums, and social media spaces. On the city's website, on a page called Neighborhoods on the Net, the city has posted links to 265 discussion spaces such as Facebook group pages, Twitter feeds and blogs devoted to neighborhoods, schools, business, issues, and local concerns. One analysis found that Seattle had more than 150 unique sources of localized, online information, which Friedland (2014) notes cannot be compared to national averages, as those figures do not exist, but that "suggests that Seattle is among the most dense local communication environments in the nation" (p. 106).

In undertaking a study of Seattle's public sphere by studying the electronic public sphere, I am operating on certain assumptions that are by no means universally accepted; namely, that the electronic public sphere counts as a public sphere, and that it is representative of the public sphere as a whole. However, Habermas' (1989) definition of the public sphere supports inclusion of the electronic public sphere:

By "the public sphere" we mean first of all a realm of our social life in which something approaching public opinion can be formed. Access is guaranteed to all citizens. A portion of the public sphere comes in being in every conversation in which private individuals assemble to form a public body...Citizens behave as a public body when they confer in an unrestricted fashion—that is, with the guarantee of freedom of assembly and association and the freedom to express and publish their opinions—about matters of general interest. (p. 136)

Here, the public sphere is envisioned as an imagined space that is instantiated every time citizens discuss public matters in non-censored space. Furthermore, no special emphasis is made here to

distinguish what is privileged as relevant speech beyond “conversation,” and no special functionality is required of a group of conferring citizens to qualify as a “public body” beyond that they confer, in a non-restrictive context, on “matters of general interest.” By this rubric, some of what occurs in electronically mediated spaces clearly qualifies as instantiation of “coming into being” of a portion of the public sphere. Also, no one theoretical location or overarching concept can embody the public sphere; it might be the totality of all conversation of its type, but it can never be viewed or measured in its totality. The electronic public sphere may not be representative of the entire public sphere, as is it is possibility that electronic public sphere behavior differs in some important way from physically located public sphere behavior, but it is, on its own merits, an important site of the public sphere.

Research Questions

This research was guided by one overarching inquiry: What information sources in Seattle’s civic information ecology are used for what purposes in civic discussions in Seattle’s electronic public sphere on what topics of public concern? For the purposes of the study, information sources were the outcome variable, assumed to depend on the predictor variables of topic and purpose. To address this overarching inquiry, the study asked the following research questions:

- RQ1: What is the frequency of information sources found in links in discussions of civic topics in online discussions in Seattle?
- RQ2: What is the frequency of purpose of links in online discussions of civic topics in Seattle?
- RQ3: Is there a relationship between purposes and information source types?
- RQ4: What is the frequency of civic topics in online discussions in Seattle?
- RQ5: Are information sources linked in online discussions in Seattle related to civic topics?

Methods

These research questions were addressed using data collected from a two-year sample of civic conversations on Seattle's subReddit r/Seattle. Reddit is a social media platform similar in many regards to a message board, in that each discussion thread begins with a post that proposes a discussion topic. Reddit is divided into subReddits, or boards devoted to specific areas of interest, and subReddits range in topic and tone from humorous cat photos to racist polemics (Massanari, 2015). Reddit users interested in a subReddit can "subscribe" to it, meaning that subReddit appears on his or her home Reddit page. Within each subReddit, discussions begin when a user creates a "post," most frequently including and usually limited to a link to a piece of information, often a news story. Reddit users, or Redditors in the local parlance, also sometimes begin threads with a post containing personal observations, with or without a link. The bulk of the activity on Reddit takes place on the ensuing comment thread, which may have hundreds of comments, many also including links.

Seattle's main subReddit, r/Seattle, has more than 88,000 subscribers in a city with a population of 686,000. It is impossible to know how many of those subscribers live in Seattle, but certainly a significant proportion of Seattle's population visits the site at least somewhat regularly to discuss matters ranging from where one might find a good burger to who is to blame for the plight of Seattle's homeless. Of all threads on the site, slightly less than a third are civic and local in nature, meaning that a significant subset of Seattle's population use r/Seattle for public sphere deliberation. That subsection is not likely to perfectly represent all Seattle's public sphere participants, as Reddit users nationally tend to be more white, liberal and male than average, but r/Seattle is inarguably an important site of Seattle public sphere activity.

Of all social media discussion spaces in Seattle, r/Seattle probably most closely approximates the Habermasian criteria for a public sphere. Discussion on Reddit is more accessible than is discussion on most other social media, in that it is not limited to social networks, as it is on Facebook, or, to a lesser degree, on Twitter; rather, anyone can view and comment on anything on Reddit. Redditors also are highly resistant to censorship. While there are rules regarding conduct, most normative behavior is performed by other discussants, who can down vote objectionable commentary to the point to which it is no longer visible. Reddit is not as ubiquitous as are some other social media; about seven percent of US adults use the site, but Redditors are politically interested and tend to be strong consumers of news (McCullough, 2010). Activity on Reddit is also impactful, given the relatively small percent of the social media market that it represents, with media often reporting on the real world impacts of Reddit community activism on matters such as the Trump campaign, the net neutrality debate, and frequent appearances by political and entertainment figures on the site (Massanari, 2015)

Reddit also serves well as a site of inquiry into how public sphere participants use information because of its emphasis on link sharing. More than most other social media platforms, Reddit is a curation site, in which people typically begin conversations with a link to some information source. In the ensuing conversation thread, interlocutors frequently post links to external sources of information. This study is a content analysis of r/Seattle civic conversations in which the unit of analysis is the links that appeared in a sample of threads on local and civic topics on r/Seattle in 2014 and 2015. After securing IRB approval, I began by scraping 31,146 discussion threads from Seattle's subReddit r/Seattle, representing the entire body of activity (including all content down voted out of visibility) from 2014 and 2015. Then I used a constructed month sampling process to create a 28-day constructed month from each year.

The constructed month procedure is commonly used to obtain a representative sample of news media content, and therefore is well suited to a study of linking behavior that is intimately associated with news media content. I used the variant of the constructed month sampling method developed by Long, Slater, Boiarsky, Stapel, & Keefe (2005) which involves selecting at random one of each day of the week from each three-month quarter of the year, which is shown to provide a highly reliable representative sample of the content that will occur in a year.

Coding

Data coding then took place in three rounds. During the first round, I and a coding partner coded each thread for whether it was on a topic both civic and local. Civic was defined as concerning issues over which some aspect of government has at least some oversight, or about any entity that is publically funded. Local meant specifically relevant to the city of Seattle. When issues impacted Seattle, but were not specific to Seattle, such as transportation issues at SeaTac or traffic on I-405, they were not coded. Civic discussions were limited to local matters because it is the Seattle information ecology that is of interest, and that ecology is oriented to Seattle concerns. After a day of training, intercoder reliability reached a Cohen's Kappa coefficient of .845. For 2014, of 691 threads, 242 were coded as civic and local, and for 2015, of 749 threads, 297 were coded as on civic and local topics. In the second round, those threads identified as civic were coded for topic. Prior to beginning data collection, a grounded theory approach was used to develop a list of topic categories. After a day of intercoder training, my coder and I conducted reliability trials and achieved a Cohen's Kappa coefficient of .868. In the third round of coding, after cleaning from the data links clearly posted by bots, links that were tags and usernames, and links to other conversations on Reddit, my coder and I coded 1781 links found within the civic threads. Those links were coded for three variables: source type, purpose of the link, and whether

the link was presented as evidentiary. Cohen's Kappa coefficients for intercoder reliability were 0.911, 0.849 and 0.799, respectively.

Initially, there were 11 categories of topic. Although a grounded theory approach was used to develop the list of topics, some topics that were not prevalent in preliminary research were included for theoretical interest, such as economic development, education, the environment, minority issues, and public health. Government meant anything to do with government itself, such as how well governing bodies govern or how well individual public officials perform their jobs. Public safety meant discussion about crime and public emergencies. Minority meant issues to do with justice for a class of individuals against which it is illegal to discriminate in Seattle, including LGBT people, ethnic groups, religious groups, and disabled people. Homelessness meant anything to do with policy regarding the homeless. Economic justice meant to do with tax policy and fairness, affordable housing, wage laws, and economic inequality. Elections meant topics to do with any upcoming vote, as well as discussions on the process of voting. Traffic and transportation meant traffic and metro transit issues specific to Seattle, as well as bicycle policy and transportation infrastructure issues. Education meant anything to do with Seattle public schools, including school levies. Environmental issues meant anything to do with environmental preservation. Public health meant anything to do with health services and education, health care access, restaurant food safety and pest control. Economic development meant anything to do with business, tourism, land use, zoning, building laws and codes as well as public investment to promote tourism. Services and utilities meant utilities, amenities or services provided by government directly or by contract with a private company, such as parks, utilities, sanitation, and animal control. Finally, anything unclear was coded other.

Prior to analysis, public health was folded into public safety and homelessness into economic justice, due to a great deal of overlap, and education was moved into the other category.

There were 17 categories of source type. Distinctions were often not obvious, as clearly every link went to a website, but content was always coded based on the original source, even if that content was found in a social media post, or was reprinted in a blog. Thus, if a blog was published by a non-profit, it was coded as non-profit. If a link was broken, but we could see from the address what it had once linked to, we coded it. Legacy sources included legacy newspaper, TV news, news magazine, and radio news and their associated blogs. Alternative news meant news content written, whether by professionals or volunteers, on city, regional, or national level news, in a style that diverged from the tradition of impartial journalism, usually politically oriented or activist. Hyperlocal news included online only or hard copy publication that focuses on an array of topics like that of legacy media (news, features, entertainment, sports, etc.) but specific to a subarea of Seattle. Minority meant any blog or publication produced specifically for a minority group. Niche/blog meant any, online only or in print, published independently of larger organizations for a specific interest, such as bicycling, issues impacting low income and homeless people, social justice, city government, and urban living. This large category encompassed all single-interest publications and website regardless of scale, from The Daily Kos to the Seattle Bike Blog. Government meant any government data or records. Non-profit meant the website or blog of any non-profit organization. Original image or video meant visual content that was produced by a non-professional, even if it was not clear if the poster was also the producer of the content. Commercial meant the websites of any retail or corporate entity, any for-profit information provider such as Zillow. Academic meant content from a peer reviewed academic journal, a university press release, or the website of an institute of higher learning.

Wiki meant peer-produced information sites, in which information is produced by volunteers or some combination of volunteers and paid staff, and in which the reader is explicitly invited to edit and produce content. Social media initially meant any social media post by a person not representing a larger organization, that is, a person acting as a private citizen. Meme/clip/video-non-news meant memes or gifs, images, or clips of pop culture material such as cartoons, movies, or sitcoms. Links were coded other/unclear if it was impossible to determine what kind of source produced a linked text or if it fit into none of the above categories.

Once coding was complete, those 17 sources were indexed into three groups of specific theoretical interest. All sources that adhered to legacy news conventions, including legacy newspapers, TV news, radio news, news magazines, and hyperlocal news outlets, were indexed as legacy media sources. All sources of information produced by professionals or skilled volunteers, including alternative news, niche publications and blogs, Wikipedia and peer-produced, non-profit and NGOs, and minority sources were indexed as alternative media sources. All sources that were non-mediated, that is, that required the poster to gather or produce information from original sources as a reporter typically does, including government, commercial, social media, academic, and original images and video, were coded non-mediated sources.

Links were coded for purpose based on the function the link served in the comment. Through a grounded theory approach, prior to the study, I identified four categories of purpose; conversation topic, deliberation, information and humor. Conversation topic meant a link that was used in the post, the first comment on a conversation thread. On Reddit, conversation threads typically begin with a post containing a link. Such posts usually contain no additional commentary, and in the cases in which commentary does appear, its purpose beyond establishing

a conversation topic is often ambiguous. A small minority of posts include deliberative commentary. Some also include more than one link, but because links could only be coded into one category of purpose, and because when more than one link appeared it was usually impossible to determine which was the most salient, all links appearing in a post were coded as conversation topic.

Links found in the context of a discussion in which opinions were expressed and which were used in the service of that deliberation were coded as deliberation. Links coded as deliberation were also then coded for whether they were presented as evidentiary. It is these links, coded both deliberative and evidentiary, that are of by far the greatest interest in determining what, if anything, is supplementing the role of professionally-produced journalism in the public sphere. The links were coded based on whether they were evidentiary at a point halfway through the project, when it became clear that the small but not insignificant number of links coded deliberative that were not evidentiary, such as links to petitions, products, or to sources presented as not credible, would damage the validity of the findings. Because the main theoretical focus of the research was to investigate what information content is considered evidentiary in the public sphere, to be coded as evidentiary, the content had to be considered credible and relevant, not the function (as in an internet speed test or an interest calculator). It also had to be produced by humans. In other words, Zillow could be credible and relevant, because the information compiled therein was reported by people for the sake of providing information, much as it might be in a trade publication. If the link, however, only went to a website where one bought a product, even though advertising is human produced, it is not created for the sake of presenting information for information's sake, and was not coded as evidentiary content. Furthermore, if a link was posted to prove that something existed (such as a

product or a book) but not to leverage content, it was not coded as evidentiary. Once the codebook was edited to reflect the new variable and my coding partner retrained, all the data coded to that point (all of 2014) was recoded before the rest was coded.

Links not posted in the context of a deliberative discussion, intended only to inform or to share resources, such as links to government pages explaining how to dispose of motor oil or links to a police scanner in response to a question about police activity, were coded as information. Typically, links were coded as information if they answered a specific question posed by another poster, provided an update on a breaking news story, directed someone to resources or added another information source to augment the information available without motive of argument. Links posted merely for the sake of amusement or ridicule, such as memes or GIFs, were coded for humor. All else was coded as other. Also recorded were the dates, title of the post that initiated the conversation thread in which the link was posted, how many links appeared in each thread, how many comments appeared in each thread, the username of each person who posted each link, whether the link appeared in the original post, and whether the source linked was native to Seattle.

Findings

RQ1: What is the Frequency of Information Sources Found in Links in Discussions of Civic Topics on r/Seattle?

The links were counted by source categories (see Table 1), and then those categories were grouped into three types; alternative media, legacy media, and non-mediated sources (See Table 2). Non-mediated sources accounted for the greatest number of links, with 694 links, followed by alternative media with 534 links and legacy media with 382 links. Among individual sources, links to government sources far outnumbered links to any other single source. Links to

pages published by various departments within the city of Seattle outnumbered links to any other single government source. Seattle's overarching website, Seattle.gov, through which are linked many city departments, received many links to pages such as parks, tech, police, utilities, city council committee reports, planning, and 911. Another frequently linked city source was the Seattle police scanner. Beyond the city, government sources were vast in variety, including links to all levels of government from federal to municipal, with a high number of links going to the state level, most often to Washington State RCWs. Niche publications and blogs were the second most prevalent individual source type, with 207 links. The array of blogs and niche publications linked was wide, almost half of which linked to local sources. Most frequently linked among Seattle niche and blog sources were the Seattle tech blog *Geekwire*, the volunteer-produced *Seattle Transit Blog*, and the *Seattle Bike Blog*. Most frequently cited of non-local sources were Historylink.org and the online magazine on state and municipal government *Governing.com*; no other non-local niche/blog source got more than three links.

Commercial sources were the third most commonly linked source category. The diversity of sources was very high, but a small number of sources were highly represented among them. Redfin and Zillow links, both of which offer information about housing prices and supply, accounted for nearly 10 percent of the total. Other frequently visited sources included Google maps, as well as internet speed tests, many of which manifested as links to the image hosting site imgur.com, as Redditors posted screen captures of speed test results to argue their claims regarding the merits of Seattle's internet franchisees. Legacy newspapers were the fourth most common source category, with 174 links. Of those, 89 links connected to the *Seattle Times*, 14 to the online-only *Seattle PI*, 12 to the *Washington Post*, and 11 to the *New York Times*.

Interestingly, *The Seattle Times* received the second highest number of links of any single website study-wide, after the city of Seattle.

Original images and video, another important non-mediated source category, were the fifth highest individual source type, with 121 links. The subject matter of original images and video was very diverse, but highly represented types included images of recently stolen objects, eye witness video and images of traffic collisions and problematic public behaviors, and images and video of large emergency situations such as structure fires and crime scenes. Non-profit organizations got 118 links, just slightly more than legacy TV, with 109. Of 105 links to alternative news sources, ranging from *Brietbart* to *Mother Jones*, 61 linked to Seattle's *The Stranger*. Other alternative news sources included *Crosscut*, *Slate*, *Huffington Post*, *Vox* and *Vice*. Peer-produced websites got 102 links, a large majority of which went to Wikipedia. While hyperlocal publications, with 44 links, accounted for a small percentage of the total, city regions represented were fairly comprehensive, including West Seattle, Phinney Ridge, and Ballard to the west; South Seattle and Kent to the south; and Maple Leaf, Lake City and Capitol Hill to the north and east. Although Seattle has about a dozen minority publications, only two links connected to a minority source.

RQ2: What is the Frequency of Purpose for which Links are Posted in Civic Discussions on r/Seattle?

Links were counted based on purpose category (see Table 3). By far the most prevalent purpose for posting links was for deliberation, accounting for 941 links, more than half of all posted links. Of those deliberative links, 824 links were coded as evidentiary, accounting for 46% of all links coded in the study. About 23% of links were posted to establish a conversation topic. About 16% of links were posted to provide information. Examples include links to Seattle

City Light in response to a question about how to challenge a power bill, and posts to Catholic Community Services and DSHS in response to a Redditor's concerned description of the rundown condition of the home of his elderly neighbor. Humor and ridicule accounted for 4% of all links.

RQ3: Is there a Relationship Between Purposes and Information Source Types?

Distribution tables were constructed for source and purpose (Table 4) and source type and purpose (Table 5). I then calculated percentages of the source types used for each purpose (Table 6) and of source groups used as evidentiary (Table 7).

Alternative media sources were most important for providing evidence; 39% of all evidentiary links went to alternative sources. Non-mediated sources accounted for 36% of evidentiary links, while legacy media accounted for just 21% of all evidentiary links. For the purpose of setting the conversation topic, however, legacy media were the most prevalent source type. Though representing just 20 percent of links overall, legacy media accounted for 40% of all 412 links used to establish a conversation topic. Of the legacy media, legacy TV sources, though less represented than legacy newspapers overall, were equally likely to be used to establish a conversation topic. Interestingly, though legacy media sources as a group dominated the conversation topic category, the individual source category used most frequently to set a conversation topic was original image and video, usually when Redditors used their own images or video to start conversations on things like used needles left on trails, stolen goods, and police activity.

For the purpose of sharing information, non-mediated sources accounted for 59% of all links. Links to government sites accounted for almost a third of those informational links, with Redditors sharing information most frequently on law, permits and police data. Also important

were links to non-profits, especially the Seattle Tenants Union, as Redditors referred each other to rental consumer protection resources. Commercial sites were a third important category, usually when Redditors recommended such products as internet capacity boosters to each other or used maps to discuss local parks. Finally, links posted for the purpose of humor were predictably dominated by memes and GIFs.

RQ4: What is the Frequency of Topics Discussed in Civic Conversations on r/Seattle?

Links were counted by topic category (see Table 8). Topics were dominated by four categories, including public safety, traffic and transportation, economic justice, and services and utilities. Those four topics accounted for 81% of all links, with economic development, elections, and government comprising about 15%. Minority issues got just 35 links, and education and environment barely appeared at all, with three links each. Public safety was the most popular topic, accounting for about a third of all links, and was dominated by discussions of crime. Other subtopics include specific emergency situations such as structure fires and weather emergencies, as well as a very few public health issues such as the decision of Harborview Medical Center to accept Ebola patients.

The second most popular topic was that of transportation, most frequently traffic, but also including evaluation of interventions such as bike lanes, mass transit, and a troubled project to reroute a surface arterial through an underground tunnel that resulted in the tunnel boring machine breaking down and remaining marooned beneath the city. Discussions on economic justice, the third most common topic, were dominated by the cost of housing and various interventions attempted by Seattle and other municipal entities (among which rent control figured highly). Issues over wage policy also were a popular subtopic, with heated debates over Seattle's \$15 minimum wage making up a significant proportion. Homelessness also was a

common subtopic within the economic justice category. Services and utilities was the fourth large category, and was dominated by discussions of Seattle's internet providers, perhaps to be expected among a demographic noted for technological proficiency.

RQ5: Are Information Sources Related to Topics?

Links to each source category were counted by topic (see Table 9), as were links to each source type by topic (Table 10). Then just evidentiary links to each source category were counted by topic (see Table 11). Finally, evidentiary links to each source type were counted by topic (Table 12). Those findings were entered into a table of the percentage of links in each topic that went to each source type (table 13), and lastly, into a table of the percentages of just evidentiary links in each topic that went to each source type (see table 14). In no topic category did legacy media dominate. Just 8% of evidentiary links on the topic of government connected to a legacy media source.

On the topic of public safety, the largest topic category overall, there were more evidentiary links to government sources than any to other individual category, accounting for 19% of all evidentiary links on that topic. Legacy newspapers and blogs had a nearly equal amount with 31 and 29 links, respectively. Non-profit, legacy TV, wiki sites, and alternative news also shared nearly equal numbers of links. The pattern held true on the topic of transportation and transportation. Of evidentiary links on that topic, 42% went to government sources, including transit sites, SDOT, WSDOT, and city documents pertaining to the deep bore tunnel project to replace the viaduct. Another 15% of evidentiary links on the topic of traffic went to blogs and niche publications, and 16% went to all legacy sources combined. . Government sources, in fact, were the most prevalent evidentiary links on four out of eight topics, including economic justice, and were used as evidence on all eight. Blogs and niche

publication were used as evidence more than any other source on the topic of economic development, and, interestingly, wiki sites (mostly Wikipedia) were used most on the topic of government. The topic of elections were dominated by non-profits and alternative news media largely because campaign websites, including websites in support of levies and initiatives, are run by ad hoc non-profit organizations and because a significant number of Redditors refer to *The Stranger's* election coverage and endorsements. Discussion of services and utilities also was likely to include links to government sites relevant to information about franchise agreements. Other sources used as evidence at least once on all eight topics were alternative news, hyperlocal news, and niche and blogs.

Discussion

The purpose of this study was to determine the extent to which people in Seattle's public sphere, as represented by r/Seattle, rely on legacy media to inform deliberation on civic topics, and how much it resources other information sources. The study also aimed to identify the extent to which the Seattle civic information ecology meets Seattle's civic information needs. The findings show that Seattle Redditors do not rely on legacy media for the majority of their information needs for any of the functions legacy media has historically almost exclusively fulfilled. Seattle Redditors access a very wide variety of civic information sources for the purpose of deliberation, only using legacy media for deliberative purpose 20% of the time. Seattle Redditors do rely on legacy media to set the conversation agenda about 40% of the time, although it would be useful to know how selective they are in choosing what of Seattle's legacy media offerings to take up. Seattle civic discussants also frequently use their own images and video to set the conversation agenda on r/Seattle, meaning that Seattle is far from dependent on legacy media for that function. Legacy media also provides little of the content that Redditors

use for non-deliberative community information; that function is most frequently filled by government sources.

The findings show that civically interested people will take advantage of a diversity of resources, and that a rich civic information environment does reduce dependency on legacy media for public sphere purposes. Hopes that open government initiatives could help citizens inform themselves are strongly supported; government sources were the single most heavily used information category in the study. Concerns that small blogs get lost to the “Babel effect” of too many voices in the public sphere are not supported, as niche publications and citizen-driven blogs were the second most frequently linked information source, with about half of those sources local to Seattle. Future research could determine the extent to which content on local blogs is derivative of Seattle legacy newspaper content. Redditors also find peer produced information useful, especially Wikipedia. Hyperlocal media comprehensive is also useful, and all quadrants of the city were represented. However, although Seattle has at least a dozen minority blogs and publications, there were only two links to minority sources in the entire sample, perhaps a reflection of the tendency of Redditors to be less diverse than the population overall.

Seattle Redditors do cite biased sources frequently, including alternative news media and non-profit produced information. The most frequently cited biased source was Seattle’s alternative weekly *The Stranger*. Though the amount of content produced by *The Stranger* is a fraction of that produced by the *Seattle Times*, the 43 links that went to *The Stranger* was nearly equal to the 50 links that went to the *Seattle Times*. While sometimes comments regarding other people’s links to *The Stranger* expressed skepticism about the newspaper’s bias, *The Stranger* was presented as evidence nearly as often as was the *Seattle Times*, suggesting that Seattle Redditors did not discount news that was perceived as biased when seeking information. This

may have some positive implications, as alternative media and non-profits may advocate for social justice in ways other sources do not. A potential pitfall identified by theorists, that people who rely on biased sources may thereby shelter themselves from information that does not support their opinions, could be mitigated by the fact that Redditors engaging in debate are by definition encountering opposing points of view.

Benkler's prediction that citizens might use social media to perform a sort of ad hoc journalism is also supported, but some caution is advised. Redditors do take an active role in producing information as well as consuming it, frequently posting their own eye-witness media on matters of civic concern, including public safety matters, and the behavior of police. Seattle Redditors also often perform researching behavior not unlike that of a news reporter, retrieving, interpreting and sharing information from government data and sources of information not presented to the general public. Redditors occasionally even get accurate information on breaking news events out on Reddit before it appears in legacy news media. These reporting behaviors are far from comprehensively filling the gap left by shrinking public affairs coverage in Seattle, however. For example, no Redditors conducted interviews with persons of interest to learn more about matters of public concern, nor did any Redditors present information that had required a Freedom of Information Act request to obtain. Additional inquiry into the effects of using biased information for the purpose of crosscutting deliberation would be useful.

The array of resources beyond legacy media in Seattle's rich civic media ecology were not just of interest, but also of use for all the functions legacy media have historically fulfilled. For the purposes of deliberation, the single most important project of the public sphere, rich civic information environment optimists again are supported; Seattle Redditors depended on a wide array of sources, and used government sources for evidentiary support in deliberation far more

than any other source. Links to niche publications and blogs, half of them local, also outnumbered links to legacy newspapers, meaning that citizen journalism has a vibrant role in the deliberative function of the Seattle public sphere. For the purposes of establishing the conversation agenda, Redditors used their own video and images more than any other source type, but all legacy media combined accounted for 40% of agenda setting links. Government sources and alternative news sources also were important agenda setting categories. Non-deliberative information was most likely to be provided by government sources. Commercial sources (mostly for the purposes of discussing internet speeds and real estate prices) and non-profits provided the majority of the rest of the informative content.

The diverse sources in Seattle's civic information ecology also provide content on a comprehensive array of topics, although certain topics that theorists have identified as being underserved by legacy media, including education, public health, and the environment, are underrepresented on r/Seattle. Education, a topic that certainly receives a high amount of public sphere attention in terms of initiatives, levies, and board membership, was almost invisible on r/Seattle, as was the environment, equally surprising in a city known for its green initiatives and environmentalist leanings. The extent to which that dearth is owing to flagging legacy media, gaps in the civic information ecology, or lack of interest on the part of Redditors, is not clear, and would make for useful future research. It is also not clear from this research the extent to which investigative journalism is being done by any source; sources linked on the topic of the performance and quality of Seattle government tended to go to Wikipedia more than any other source, mostly because Wikipedia has pages on various types of government policy, (including a page on "the Seattle Process" of overthinking policy while getting little done). Hopes that minority issues might benefit from a rich civic information environment may be supported as

well; academic sources, alternative news sources, niche publications and blogs, and non-profits each got more links than did legacy newspapers. Conjecture that citizens might be weary of standard legacy media coverage of elections and are turning to other sources may be supported; only two evidentiary links on elections went to legacy newspapers, and none went to legacy magazines, radio, or TV. In contrast, eight each went to alternative news sites and non-profit sites, most of which were campaign sites. Further inquiry into which sources best serve discussion on which topics, and by extension, which topics are underserved and why, is merited.

Conclusion

Without baseline data dating to the pre-internet era, it is impossible to know to what degree the public sphere relied on legacy media prior to recent legacy media contractions, but it is clear that the portion of Seattle's public sphere that participates in civic discussions on Reddit is resourceful in seeking and sharing information from a vast array of sources beyond legacy media. If the characteristics of information consumption behavior identified in this study are representative of the greater national public sphere, then concerns that the public sphere depends primarily on legacy media information are not fully supported. Furthermore, evidence found in r/Seattle invites further exploration of the degree to which citizens acting in the public sphere have taken on some rudimentary tasks of the news reporter; finding, interpreting, and sharing unmediated data such as that from government data, eye-witness accounts, and commercial and academic sources. Future research on whether investigative journalism is produced by entities other than legacy media could be revealing. Lastly, this research demonstrates that the exploration of the relationship between the evolving civic information ecology and the public sphere is a potentially fruitful avenue of inquiry into the overall health of the public sphere.

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Appendix A

Tables

Table 1. Frequency of links by source

Source Type	Frequency	Percent
Government	335	19
Niche/Blog	207	12
Commercial	186	10
Legacy Paper	174	10
Original	121	7
Non-Profit	118	7
Legacy TV	109	6
Alternative News	105	6
Wiki and peer produced	102	6
Meme/GIF	71	4
Hyperlocal	44	2
Legacy Radio	32	2
Academic	29	2
Social Media	24	1
Legacy Magazine	23	1
Minority	2	0
Other/Unknown	99	6
	N=1781	

Table 2. Frequency of links by indexed source

Source by Index	Frequency	Percent
Non-Mediated	695	39
Alternative	534	30
Legacy	382	21
Other	170	10
n=	1781	

Table 3. Frequency of purpose

Purpose	Frequency	Percent
Deliberation	941	53
Conversation Topic	412	23
Information	293	16
Humor	82	4
Other/Unclear	53	3
n=	1781	

Table 4. Distribution table for source and purpose (those deliberative links used as evidence in parentheses)

Source type	Conversation topic	Deliberation	(Evidentiary)	Humor	Information	Other	Total
Academic	1	20	(20)	1	7	0	29
Alternative News	38	66	(64)	0	3	0	107
Commercial	16	113	(45)	8	44	5	186
Government	39	206	(203)	1	86	3	335
Hyperlocal	20	16	(16)	0	7	1	44
Legacy Magazine	9	13	(13)	0	0	1	23
Legacy Paper	59	100	(99)	1	13	1	174
Legacy Radio	17	13	(13)	0	2	0	32
Legacy TV	59	30	(30)	0	20	0	109
Meme/GIF	11	5	(0)	53	0	2	71
Niche/Blog/Website	46	135	(122)	2	23	1	207
Non-Profit	17	62	(54)	0	36	3	118
Original Picture/Video	68	23	(22)	2	26	2	121
Social Media	2	12	(9)	0	9	1	24
Wiki	0	86	(85)	7	7	2	102
Other/Unknown	10	41	(29)	7	10	31	99
Total	412	941	(824)	82	293	53	

Table 5. Distribution table for source type and purpose

	Conversation Topic	Deliberation	Humor	Information	Other	Total
Alternative Media	101	349	9	69	6	534
Legacy Media	164	172	1	42	3	382
Non-Mediated	126	374	12	172	11	695
Other	21	46	60	10	33	170
Total	412	941	82	293	53	

Table 6. Percentage of source type used for each purpose

	Conversation Topic	Deliberation	Humor	Information	Other
Alternative Media	25	37	11	24	11
Legacy Media	40	18	1	14	4
Non-Mediated	31	40	15	59	21
Other	4	5	73	3	62

Table 7. Percentage of evidentiary links connecting to each source type

	Evidentiary
Alternative Media	39
Legacy Media	21
Non-Mediated	36
Other	4

Table 8. Frequency of topic

Topic	Links	Percent
Public Safety	597	34
Traffic/Transpo	385	22
Econ. Justice	253	14
Services/Utilities	225	13
Econ. Dev	103	6
Elections	82	5
Government	71	4
Minority	35	2
Education	3	0
Environment	3	0
Other/Unclear	24	1
n=	1781	

Table 9. Distribution table for source and topic

Source Type	Ec Dev	Econ Justice	Elections	Gov	Minor	Safety	Services	Transpo	Other	Total
Academic	5	4	2	7	4	5	1	1	0	29
Alternative News	2	13	13	5	4	41	7	20	2	107
Commercial	10	38	3	3	0	37	56	37	2	186
Government	9	38	11	9	1	89	48	128	2	335
Hyperlocal	4	4	5	2	5	14	3	6	1	44
Legacy Magazine	1	7	1	1	1	5	2	4	1	23
Legacy Newspaper	15	30	5	6	3	62	13	35	5	174
Legacy Radio	1	8	1	2	1	11	0	6	2	32
Legacy TV	3	9	1	3	0	74	2	15	2	109
Meme/GIF	5	10	2	1	1	23	4	25	0	71
Niche/Blog/WebSite	31	39	6	5	7	47	26	43	3	207
Non-Profit	0	27	24	1	4	34	12	15	1	118
Original picture/video	3	3	3	3	0	64	22	19	4	121
Social Media	0	3	0	0	0	17	4	0	0	24
Wiki	8	10	2	17	1	28	15	20	1	102
Other	6	10	3	6	3	46	10	11	4	99
Total	103	253	82	71	35	597	225	385	30	n=1781

Table 10. Distribution table for source type and topic

	Ec Dev	Ec Justice	Election	Gov.	Minor.	Safety	Services	Transpo	Other	Total
Alternative Media	41	89	45	28	16	150	60	98	7	541
Legacy Media	24	58	13	14	10	166	20	66	11	393
Non-Mediated	27	86	19	22	5	212	131	185	8	703
Other	11	20	5	7	4	69	14	36	4	174
Total	103	253	82	71	35	597	225	385	30	n=1811

Table 11. Distribution table for source and topics when considering only evidentiary links

Source Type	Ec Dev	Economic Justice	Elections	Government	Minority	Other	Public safety	Services/ Utilities	Traffic/ Transpo	Total
Academic	0	3	1	6	4	0	4	1	1	20
Alternative News	2	7	8	1	3	0	24	6	13	64
Commercial	5	16	1	1	0	0	10	4	8	45
Government	8	33	3	6	1	1	48	20	83	203
Hyperlocal	1	2	2	1	2	0	6	1	1	16
Legacy Magazine	0	5	0	0	0	1	4	2	1	13
Legacy Newspaper	7	23	2	1	2	1	31	11	21	99
Legacy Radio	0	4	0	0	0	1	6	0	2	13
Legacy TV	0	1	0	2	0	0	19	1	7	30
Niche/Blog/Website	17	24	4	4	3	1	29	10	30	122
Non-Profit	0	10	8	1	3	1	18	7	6	54
Original pic/video	1	1	1	2	0	0	11	2	4	22
Social Media	0	1	0	0	0	0	8	0	0	9
Wiki	8	10	1	17	1	0	19	12	17	85
Other/Unknown	1	3	3	4	1	2	10	3	2	29
Total	50	143	34	46	20	8	247	80	196	n=824

Table 12. Distribution table for source type and topic when considering only evidentiary links

	Ec Dev	Economic Justice	Elections	Government	Minority	Public safety	Services Utilities	Traffic Transpo	Other	Total
Alternative Media	27	51	21	23	10	90	35	66	2	325
Legacy Media	8	35	4	4	4	66	15	32	3	171
Non-Mediated	14	54	6	15	5	81	27	96	1	299
Other	1	3	3	4	1	10	3	2	2	29
Total	50	143	34	46	20	247	80	196	8	N=824

Table 13. Percentage of each topic category that links to each source type:

	Ec. Dev.	Ec Justice	Elections	Government	Minority	Public Safety	Services/ Utilities	Traffic/ Transpo	Other
Alternative Media	40	34	55	40	46	25	27	25	23
Legacy Media	23	23	16	20	29	28	9	17	36
Non-Mediated	26	34	23	31	14	36	58	48	27
Other	12	8	6	10	11	12	6	9	13

Table 14. Percentage of each topic category that links to each source category when only deliberative and evidentiary links are considered:

	Ec Dev.	Ec Justice	Elections	Government	Minority	Public Safety	Services/ Utilities	Traffic/ Transpo	Other Unclear
Alternative	55	36	62	50	50	36	27	33	25
Legacy	17	24	11	8	20	27	19	16	4
Non-Med	29	38	18	31	25	33	34	49	12
Other	8	3	9	8	5	4	4	1	25