FROM PUBLIC SPACES TO PUBLIC SPHERE

Rodrigo Zamith[a] & Seth C. Lewis[b]

[a] (author to whom correspondence should be addressed), School
of Journalism & Mass Communication, University of Minnesota,
USA. E-mail: , Web: http://www.rodrigozamith.com

[b] School of Journalism & Mass Communication, University of
Minnesota, USA. E-mail: , Web: http://sethlewis.org/
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FROM PUBLIC SPACES TO PUBLIC SPHERE
Rethinking systems for reader comments on online news sites

Rodrigo Zamith and **Seth C. Lewis**

This study examines how journalists and technologists are re-imagining the construction of networked, dynamic spaces for online news discussion through a qualitative study of 126 idea submissions to a popular news innovation contest. We consider these submissions in the light of the concept of the public sphere, with a specific focus on how these submissions might address shortcomings identified in the literature about the ability of the internet, but of news commenting forums in particular, to serve as an extension of the public sphere. Four main themes emerged in the submissions: a need to (1) better organize content, (2) moderate content more effectively, (3) unite disjointed discourse, and (4) increase participation while promoting diversity. We find in these proposed solutions the possibility for relatively low-cost, easy-to-build systems that could moderate comments more efficiently while also facilitating more civil, cohesive, and diverse discourse; however, we also find the lingering danger of designing new systems that could perpetuate old problems such as fragmentation, filter bubbles, and homogenization. Ultimately, it remains to be seen how technological innovations might help or hinder the ability of the internet, and of news commenting spaces in particular, to serve as an extension of the public sphere. More broadly, by studying how these innovation-contest submissions sought to transform the discursive systems of news websites, we can begin to grasp how the evolution of digital journalism, technologically, might facilitate a broader rethinking about how news institutions could better serve the ideals of deliberation in a changing media environment.

KEYWORDS comments; discursive systems; news innovation contests; online discussion; open source; public sphere; technologists; user-generated content

Introduction

The deliberation of diverse views has long been viewed as an essential component of strong democratic societies (Dewey 1927; Habermas 1989). The rise of the internet—and with it a wide array of digital media tools, platforms, and spaces—was much heralded for its potential both to broaden and deepen forms of public deliberation: by its very technological architecture, the internet would expand the traditional boundaries of discourse by giving more people a public voice, while also providing a set of tools for interactive, asynchronous, and multi-directional modes of discussion that might lead to more thorough dialogue about public issues (Benkler 2006). Indeed, with each passing year, online spaces become increasingly used by citizens to engage in public discussion (Vitak et al. 2011). The importance of this development has been

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underscored by scholars who consider online discussion to be an essential form of civic participation (e.g., Puig-i-Abril and Rojas 2007). One notable space for online discussion is the reader comments sections on a typical news website; by now, more than 90 percent of the top 150 US newspapers have adopted commenting systems (Santana 2011) and virtually all major news sites allow user comments (Diakopoulos and Naaman 2011). Indeed, it is in the reader commenting sections that a great deal of collective meaning-making occurs about current, newsworthy affairs, making them important, yet remarkably understudied, spaces (Trice 2011).

However, by many accounts, the situation is broken. The discussion forums of online news sites are often poorly organized, dominated by loud and obnoxious minorities, and riddled with venomous dialogue (Albrecht 2006; Binns 2012; Sunstein 2001). This is hardly the ideal environment for the heterogeneous, logical, and coherent deliberation that scholars like Calhoun (1992) and Habermas (1989) have argued is central to the idea of the public sphere. Indeed, as Ye and Li (2006, 255) put it in their analysis of US newspaper websites, "the value of forum messages is fairly limited, if measured by the high standards of democratic deliberation." What, then, is to be done about the present challenges facing news discussion spaces online?

This study examines the case of a news innovation contest that intended to answer that question. In 2011, two leading nonprofit foundations at the intersection of journalism and technology—the Knight Foundation and the Mozilla Foundation—formed a partnership to seek the best people and ideas for "producing next-generation web solutions that [would] solve real problems in news," in part by using a series of open contests calling for news technology software, systems, or processes (see Lewis and Usher 2013). One such contest, called "Beyond Comment Threads," asked participants to generate ideas for more dynamic spaces for online news discussion. Specifically, it asked: "With all that activity happening across the web, how do we enable more coherent, elevated discussion? How can news organizations improve the signal-to-noise ratio in public news commentary?"[1] In particular, the role of commentary in furthering democracy was a point of emphasis in the challenge. Thus, while such open-call innovation contests have become a growing feature in the journalism field (Lewis 2011), this particular contest is salient for its connection to larger concerns about the internet, news, and public deliberation.

This study seeks to examine how online news discussion systems were re-imagined by innovators, from the journalism and technology sectors, who responded to this open call.[2] We qualitatively analyze the 126 submissions to explore how they address—or fail to address—the shortcomings of the internet and the commenting systems commonly found on online news sites with regard to their capacity to serve as platforms for public dialogue. The study positions these findings in light of the barriers that we identify, from the literature, that have limited the internet's ability to go beyond a mere public space to become an extension of the idealized public sphere. By studying how the submissions by these innovators sought to transform the discursive systems of news websites, we can begin to grasp how the evolution of online journalism, technologically, may lead to a broader rethinking about how news institutions could better serve the ideals of deliberation in a changing media environment.

Literature Review

The Public Sphere in the Age of the Internet

According to Habermas (1989), the public sphere is a site of social activity in which critical-rational discourse informs public opinion, which should then translate to sound, democratic consensual decision-making. More specifically, it presents "a realm of our social life, in which something approaching public opinion can be formed" (Habermas 1974, 49) that is autonomous from the state and economy. The public sphere depends on both the quality of the discourse as well as the quantity of participation (Calhoun 1992). Indeed, although the desired outcome within a public sphere is agreement, it should come as a byproduct of uninhibited and diverse deliberation over public affairs. To foster this necessary diversity, access must remain open for any party affected by the issue at stake, and within the debate, participants must be able to raise arguments freely (Habermas 1996).

It is worth noting that Habermas' conceptualization of the public sphere has been subject to various critiques, including being overly romanticized and idealized, being plural instead of singular, and perhaps having never actually existed (McKee 2004). To this end, Papacharissi (2008) suggests that the public sphere should be understood therefore as a metaphor for the ideal form of civic participation and interaction. Indeed, many scholars still see it as a suitable normative framework from which to draw in studying discourse and participation on the internet (e.g., Cammaerts and van Audenhove 2005; Gerhards and Schäfer 2010; Papacharissi 2002; Ruiz et al. 2011).

Scholars have long envisioned the internet making democratic politics more inclusive by providing individuals with both the information necessary to make sound decisions and a platform through which they could advocate with minimal resources. In particular, there has been considerable debate over whether the internet may serve as an extension of the public sphere. Viewed through this lens, some scholars expected that the internet would help foster a deliberative model that was transparent, free of prejudice or obstacles to equal participation, and encouraged informed dialogue, thereby helping realize Habermas' ideal conceptualization of rational-critical deliberation (Albrecht 2006). Indeed, according to Benkler (2006), recent technological advances have led to a radical change in the organization of information production, enabling a shift from a mass-mediated public sphere controlled by media owners to a more democratic networked public sphere that provides citizens with greater opportunities for engagement. However, other scholars (notably Hindman 2009) have questioned the extent to which the internet has led to a flowering of diverse media discourse.

Dahlberg (2007a) has pointed to three democratic models that have dominated internet–democracy rhetoric and practice: the liberal individualist model, the communitarian model, and the deliberative model. The liberal individualist model views the internet as a tool connecting citizens to vast amounts of political information and linking them directly to elected representatives to whom they can express their views. The communitarian model views the internet as a hub to unite individuals and enhance communal spirit and values. Lastly, the deliberative model views the internet as an extension of a public sphere of citizen deliberation, which allows for divergent viewpoints to be considered and debated by individuals, thereby advancing democratic ideals.

While the nature of commenting systems and discussion forums allow them to be studied in the light of all three models, the deliberative model arguably offers the most appropriate lens given this study's theoretical framework and the goals of the news innovation challenge. Indeed, the challenge explicitly called for contributions relating to deliberative elements, such as enabling "more coherent, elevated discussion" and improving the "signal-to-noise ratio in public news commentary."[3] Dahlberg identified several characteristics of the ideal deliberative model:

> This rational-critical communication is ideally inclusive (formally); free (non-coercive, including autonomy from state and corporate interests); equal (communicatively); sincere (as far as this is possible), respectful (putting oneself in the position of the other); reasoned (framing arguments in terms of why particular claims ought to be accepted) and reflexive (identity re-constituting). Dahlberg (2007a, 49)

Scholars have noted several issues that challenge the internet's ability to extend the public sphere effectively (Albrecht 2006; Papacharissi 2002). Among these are six key barriers: a "digital divide"; incivility among participants; the anonymity of communicators; the fragmentation of deliberation; selective exposure by individuals; and the homogenization of discussions.

Digital divide. The "digital divide" refers to the inequalities of accessing technology as well as the skills necessary to make full use of it (Hargittai 2002). Indeed, although broadband internet access has rapidly increased in recent years—in the United States, for example, nearly 70 percent of the population now has broadband access (OECD 2012)—a considerable skills gap remains among those with access (DiMaggio et al. 2004). In the context of the public sphere, this results in some parties having greater efficacy than others (Jennings and Zeitner 2003; van Dijk 2005).

Incivility. Scholars have noted that there is a prevalence of cursory opinions and combative behavior in computer-mediated interactions, including contentious "flame wars" between users and the prevalence of "trolls" who strive to instigate conflict (Binns 2012; Wilhelm 1998). Such behavior may have disruptive effects on the interpersonal relationships between forum members, and may result in the adoption of behavioral strategies like withdrawal and avoidance among members of the networked community (Lee 2005). In the present context, the prevalence of incivility online poses a considerable threat to discussants' ability to engage in quality discourse, which is key to the public sphere (Calhoun 1992).

Anonymity. Scholars have long identified the ability of users to take on fake identities as a factor in the likelihood that individuals will engage in disruptive behavior, largely because it allows individuals to disassociate themselves from their words, thus making them less accountable (Binns 2012; Hlavach and Freivogel 2011).[4] Indeed, as Hlavach and Freivogel (2011, 24) note, "Anonymity seems to unleash the worst in some of these posters; they hide their faces behind a pseudonym while their voices shout out angrily, free of the normal bonds of civility."

Fragmentation. Fragmentation occurs when discourse becomes disjointed and dispersed, which often results in the lessening of the impact of those discussions (Benkler 2006; Moe 2009; Sunstein 2001). Fragmentation within a comment thread may occur when it becomes muddled by irrelevant messages, thus making it difficult to

either locate associated comments or identify the connecting threads across posts. In the context of the public sphere, it may also occur when conversations are spread across a number of discursive sites with limited exchange occurring between them (Papacharissi 2002).

Selective exposure. Selective exposure refers to the procurement of information that is consistent with one's existing opinions and interests, and to avoiding inconsistent material, thus resulting in the aversion of oppositional viewpoints (Dahlberg 2007b; Pariser 2012; Sunstein 2001). Its importance is underscored by literature suggesting that disagreement is a key component for the development of sound public opinion, particularly by forcing a more careful consideration of challenging points of view and subsequently fostering understanding (Gutmann and Thompson 1996; Price, Cappella, and Nir 2002; Wojcieszak and Price 2012).

Homogenization. A final concern shared by scholars relates to the concentration of contributions among a small core of very active users, with a few select individuals dominating discussions while the broader audience remains comparatively passive, thereby ostensibly homogenizing debates (Albrecht 2006; Dahlberg 2001). This is of interest to the public sphere because it is dependent upon active participation by a multitude of parties, as well as heterogeneous debates (Habermas 1989).

In the context of these barriers, it has been argued that the internet may not yet constitute an extension of a Habermasian public sphere. In particular, Papacharissi (2002) notes the distinction between a public sphere that enhances democracy by promoting the democratic exchange of ideas and a public space that enhances discussion by creating another forum for deliberation. She concludes that the internet does not yet constitute a public sphere, but is rather a new public space for discussion that facilitates greater, though not necessarily more diverse, political discussion.

Commenting Systems on News Websites

The news media have long been considered an important component of the public sphere (Habermas 1974). The digital frameworks for today's news media arguably have enriched the capacity for public input and deliberation as interactive functions, now almost universal across news websites, invite reader comments (Canter 2013). As Ruiz et al. (2011, 463) have suggested, "Comments in online news could be the contemporary enactment of the eighteenth-century *cafés* that founded [the] public sphere."

While there has been ample work looking at general participatory systems on the internet, scholarly attention to reader commenting systems on news sites has been far more limited. Chung (2007) found that although online editors saw the value of interactive features, they were often concerned about quality control and manageability, maintenance costs, and the additional workload they might incur for newsroom employees. These concerns are echoed by Thurman (2008) in his interviews with British editors. Domingo (2008) adds that the prevalence of traditional journalism culture, which views readers predominantly as passive consumers, has prevented online newsrooms from adopting and developing most of the ideals of interactivity. Furthermore, Santana (2011) found that reporters generally view comments as being of dubious

quality and questionable worth. Consequently, the role of citizen participation via comments has been limited, despite the addition of interactive features on websites (Domingo et al. 2008). Additionally, although readers generally like interactive features on online news sites, they make limited use of them (Larsson 2012). Indeed, Ruiz et al. (2011, 480) found that, at some newspaper sites, "very few users contribute more than one comment and there is very little diversity of opinion."

In terms of moderation, two main attitudes toward commenting systems have emerged in newsrooms: an interventionist attitude, in which moderation is performed prior to the comments being posted by staff members, and a loose attitude, in which moderation is performed after the publishing process, either by the community or by a small staff (Reich 2011). According to Diakopoulos and Naaman (2011), the act of moderating may be viewed as an editorial function, thus requiring professional communicators who have a strong sense of journalistic standards. However, the small size of online teams at news organizations makes it difficult for them to moderate or become fully engaged in extensive participation opportunities (Diakopoulos and Naaman 2011; Domingo 2008).

Overall, the literature on online news comments suggests that journalists are skeptical about the quality of audience contributions in news website forums; therefore they choose to limit the extent to which users may participate in the news construction process, and altogether struggle to moderate and shape their commenting spaces into something resembling the idealized dialogue of the public sphere. Amid such challenges, emerging Web technologies—and, moreover, the contribution of technologists, or computer programming specialists—have been heralded for their potential to fix the broken system of news comments. In the light of the aims of the news innovation challenge, scholars' concerns about the internet's ability to serve as an extension of the public sphere, and the limitations of the current implementations of participatory systems in online news publications, this study is guided by the following research question:

RQ1: How do the submissions by the news innovators responding to this challenge seek to transform the discursive systems on news websites, and how might these changes help to address the shortcomings of the internet in terms of its ability to serve as an extension of the public sphere?

Case Study and Method

Knight-Mozilla News Technology Partnership

Perhaps the highest-profile and best-funded collaboration between journalists and technologists, the Knight-Mozilla News Technology Partnership[5] is a $2.5 million, three-year initiative begun in 2011 that unites two powerful institutions in the news world (Knight) and technology world (Mozilla) around a shared interest in retooling journalism. The purpose of the partnership was to identify innovative ideas and individuals, train them to understand journalism in relation to open-source technology, and place the best and brightest as "fellows" in leading newsrooms. This process began in spring 2011 with a series of three "design challenges" aimed at attracting "designers, developers and news hackers." The challenges, in chronological order, were:

- *Unlocking Video*: How can new web video tools transform news storytelling?
- *Beyond Comment Threads*: How can we reinvent online news discussions?
- *People-powered News*: What's the next killer app for news?

Out of nearly 300 submissions to these challenges, the most promising ideas resulted in 60 people being invited to participate in a month-long virtual learning lab, followed by additional screening to select the newsroom fellows for 2012.

The present study focuses on analyzing the content of the public submissions, which comprised the first step in the fellowship process, with a specific focus on the second challenge. This challenge, titled "Beyond Comment Threads," asked participants to generate ideas for more dynamic spaces for online news discussion. Specifically, it asked for ideas that would "enable more coherent, elevated discussion," thereby helping news organizations "improve the signal-to-noise ratio in public news commentary." Although the call encouraged highly technical solutions, it was explicit in asking for more than technological tweaks, seeking a larger rethinking of approaches to collecting, synthesizing, and re-distributing user comments on the news. Such ideas, then, were to address vexing socio-technical questions and, ultimately, the fundamental question of how democracy might be enhanced through better networked discursive systems.

Data Collection and Analytic Procedure

This study drew on data obtained from the Knight-Mozilla News Technology Partnership website and covered the "Beyond Comment Threads" challenge.[6] This challenge generated a total of 126 submissions, or just over 43 percent of the 291 submissions received for all challenges, from 110 different authors over the course of 29 days. These submissions were all systematically downloaded by the researchers in 2011, after the conclusion of all challenges.

Each submission had a title, the author's name, a brief biography, a summary of the idea, and the full description of the idea, as well as a comments section and the ability for others to vote on the idea. This study focused on the titles, summaries, and full description of the ideas. Titles were comprised of seven words on average and ranged from one to 18 words. The submission summaries were, on average, made up of 93 words, ranging from 16 to 305 words. The full description consisted, on average, of 266 words, ranging from no words to 2042 words; in about one-third of the instances, the submission included only a summary of the idea. Although most submissions were comprised solely of words, some included diagrams and videos as well; these elements were also analyzed where possible. Additionally, external links directly pertaining to the project (e.g., a presentation stored using a third-party service) were also reviewed if the submission offered insufficient context.

A thematic analysis of all 126 submissions was conducted by the first author using constant comparative methodology (Glaser and Strauss 1967). Each submission was stored and analyzed separately, and coded using a qualitative data analysis program. These data were micro-analyzed and different textual segments of each submission (e.g., a sequence of words or cluster of sentences) were classified into emergent categories based on the themes and challenges that the submission sought

to address. After the initial categorization, the researcher returned to the data to gain further insight into the specific themes that emerged and to compare each datum to other pieces of similar and dissimilar data. Additionally, to ensure that codes were applied consistently, for each code the first author reviewed all textual segments associated with that code as a group. This process was repeated until new observations failed to add significantly to existing categories and categories could not be further collapsed. A single submission could be associated with multiple categories.

Findings

Many of the concerns that scholars have noted regarding the internet's ability to serve as an extension of the public sphere emerged in the submissions. Of particular concern to these innovators were shortcomings in: (1) content organization, (2) moderation systems, (3) uniting disconnected discourse, and (4) increasing participation while promoting diversity.

Content Organization

Many of the innovators identified the often-extensive length of comment threads as a deterrent for engagement, necessitating new ways of organizing existing content. Several of the proposals pertained to creating visualization systems to provide readers with a snapshot of ongoing debates. In particular, a number of innovators suggested using word clouds, or visual representations of textual data in which the importance of units (e.g., words or tags) is reflected by the font size or color of the unit. One innovator suggested creating dynamic word clouds of key phrases or concepts in comment threads, which would be ascertained through automated data mining. Another suggested using data-mining techniques to analyze networks of similar opinions and detect conflicting groups of interest. Visualization of these arguments, as well as the number of supporters and other contextual information, would then allow users to browse the network of opinions and quickly discover the central debate. Innovators repeatedly deemed the layout of most commenting systems to be unintuitive and counterproductive. Suggestions to remedy this issue included implementing Gmail-like threaded conversations and aggregating posts in a manner that allows them to be viewed in one full screen through a browser extension. Lastly, a number of innovators proposed systems for greater personalization of content, drawing from several sources, including behavior analysis, registration information, and users' social connections, in order to make discussions more relevant to users.

Moderation Systems

Privileging useful commentary was another key theme that emerged in these submissions, and the innovators proposed a diverse range of solutions. Particularly prominent were crowd-sourced and reputation-based solutions. Two innovators proposed requiring individuals to moderate a set number of comments before allowing

them to view or engage in the conversation. Another innovator proposed an engine that associated readers with "moderation neighbors" who rate the same content in similar ways. Building off these crowd-sourced solutions were systems that rewarded and privileged reputable commenters. One innovator proposed creating an algorithm to assign a "TrustRank" score to commenters to assess their trustworthiness. Over time, such a system would ensure that reputable individuals would never see their comments buried in popular topics. Other solutions included hybrid approaches using a combination of staff reviewers, crowd-sourced moderation, and automated text analysis or using hand-moderated messages to help create Bayesian filters to predict when a message is likely to violate a rule. However, some innovators ultimately argued that good moderation must be a manual editorial process, similar to traditional letters to the editor, that could be operationalized straightforwardly by simply editing comments to enforce proper grammar and spelling.

Uniting Disconnected Discourse

News innovators recognized that while comment threads often elicited useful commentary, discourse was often fragmented and disconnected, both within sites and more broadly throughout the internet. Several submissions sought to address this issue by discussing standardized, federated commenting architectures that worked across websites and services, with some innovators suggesting that this should be accomplished on the server-side while others proposed client-side solutions. Visually uniting disjointed commentary was also a point of focus. One innovator proposed creating a system that identified common topics within threads and mapped connections between those topics; another suggested using data-scraping technologies to create tree diagrams of the development of user discussions across sites. Another proposal included promoting continuous conversation by developing a system that allowed users to import commentary from previous articles.

Increasing Participation and Promoting Diversity

Another point of emphasis for the innovators was to promote both more commentary and greater diversity in the discourse. A popular suggestion for increasing participation was to offer incentives. One such incentive was to simply reward good commenters by asking them to write longer op-ed pieces that could be published alongside the article. On the other end of the spectrum was a proposal for rewarding commenters with a share of the advertising revenue. A middle-ground approach was suggested by another innovator, who proposed providing commenters with merit-based badges to signify status and rewarding them with credit toward paid services. To promote greater diversity, several algorithmic solutions were proposed to ensure that users were exposed to divergent viewpoints. One proposal included using textual analysis tools to parse the sentiment and content of comments, and subsequently present readers with comments both consistent and inconsistent with their own views. Another innovator proposed relying on behavioral data to predict users' interests and show them diverse viewpoints. Some submissions attempted to increase both participation

and diversity simultaneously, such as by leveraging existing technologies to facilitate comment translation and developing a client-side tool to help invite specialists to join the conversation.

Analysis and Discussion

The responses to the "Beyond Comment Threads" challenge help us understand how news innovators are re-imagining networked discursive systems and highlight some of the tensions and difficulties of transforming news websites from mere public spaces to an extension of the public sphere (Albrecht 2006; Papacharissi 2002, 2011). In particular, four main themes emerged in these ideas: a need to (1) better organize content, (2) moderate content more effectively, (3) unite disjointed discourse, and (4) increase participation while promoting diversity. We review these in light of the barriers identified in the literature that preclude the internet, and news commenting spaces in particular, from effectively becoming an extension of the public sphere.

First, the emphasis on better organizing content on discursive systems may be understood as an attempt to address two of the barriers. First, it may help reduce the *digital divide* (DiMaggio et al. 2004; Hargittai 2002; Jennings and Zeitner 2003; van Dijk 2005), particularly in terms of the skills necessary to efficiently parse through extensive comment threads but also to actively participate in discussions. Second, it potentially helps reduce *fragmentation* (Moe 2009; Sunstein 2001), thus promoting quality, hetero-geneous deliberation by piecing together disparate messages and making it easier for both readers and commenters to stay on-topic. Indeed, more intuitive and accessible interfaces, as well as advanced visualization systems, allow commenters to not only discover the central debate more quickly, but also experience the discourse in new, multifarious ways, thereby enhancing the value of discursive systems. However, these same aids may also pose a threat to deliberation. By employing multi-level organiza-tional filters and interactive visualizations that make it easier for users to find what they are looking for, these innovators may be inadvertently creating new opportunities for readers to create filter bubbles (Pariser 2012; Sunstein 2001). A similar risk is undertaken by the adoption of algorithms that analyze the content and sentiment of messages. Indeed, several submissions sought to leverage these technologies with the explicit intent of presenting the reader with only the content that they would find interesting. This would limit the exchange of and exposure to opposing ideas, which scholars have noted is crucial to the notion of a public sphere (Gutmann and Thompson 1996; Price, Cappella, and Nir 2002; Wojcieszak and Price 2012). Alternatively, these same technolo-gies may be implemented in a manner that purposely presents the reader with comments that are inconsistent with their views, as several innovators sought to do; this could greatly enhance the deliberative power of online discursive systems.

Second, the attention given to reworking moderation systems, and in particular to review content more effectively, may be viewed as an attempt to address two additional barriers. First, it aims to mitigate *incivility* (Binns 2012; Wilhelm 1998) by reducing the prevalence of cursory opinions and combative behavior by either making them less prominent or precluding them altogether. Second, in reference to *anonymity* (Hlavach and Freivogel 2011), it conceivably either discourages users from taking on fake identities or rewards them for developing and sticking with one identity, even if it is a

pseudonym. As such, sophisticated reputation-based moderation systems that reward individuals who engage in thoughtful discourse may offer great promise and provide balance between promoting constructive rational-critical dialogue and providing a forum where commenters may discuss unpopular thoughts without fear of reprisal or shunning. However, it is worth noting that such systems provide identifiers that may signify status or credibility, thereby potentially leading to some commenters being privileged over others through reputation, which runs counter to the egalitarian principles of the public sphere (Akdeniz 2002). Additionally, these systems are likely to require some form of registration—even if registration is not mandated, anonymous users would likely be placed at some disadvantage—which may limit both levels of participation and possibly dissuade the dissemination of unpopular ideas if users believe the commentary could be traced back to them. If executed carefully, however, such an approach, coupled with the implementation of sophisticated systems that can identify rule-breaking behaviors and warn users, as well as accurately identify and remove commentary that is of limited worth, may substantially improve the quality of the debates on discursive systems with little cost to newsrooms. Interestingly, although some innovators advocated for manual moderation by media professionals, the majority of the submissions in this category involved either crowd-sourcing or algorithmic solutions. Such crowd- or computer-powered approaches effectively challenge media professionals' belief that the act of moderation is akin to an editorial function (Diakopoulos and Naaman 2011), as well as their perception that audiences are passive (Domingo 2008), thus potentially setting the stage for tension over their adoption by news organizations.

Third, the large number of submissions that sought to address the perceived disjointedness of commentary on networked discursive systems may be viewed as an attempt to address the barrier of *fragmentation* (Moe 2009; Sunstein 2001). A particularly compelling line of innovation is that of federated commenting systems that span across websites and services, especially if they can effectively tie similar topics across a range of news websites. Such systems would not only help to reduce the fragmentation of discourse and the repetition of arguments, but also potentially help unite people of different persuasions who may otherwise only be exposed to a limited range of opinions, thus arguably reducing the effect of filter bubbles. Consequent to this may be the proliferation of more heterogeneous discourse and the realization of more valuable deliberation, key elements to the development of a public sphere. However, this is not only a technically challenging endeavor, but it also remains unclear how it would be implemented and how news organizations might react to it. In terms of implementation, both client- and server-side solutions were proposed. If a client-side solution were to be adopted, it would likely require user intervention and skills that only the technically gifted possess, and may therefore only further the "digital divide." If a server-side solution were to be adopted, it would likely require extraordinary cooperation among news organizations to use common application programming interfaces (APIs) that allow communication across systems, and likely involve a potentially expensive redesign of existing discursive systems. Additionally, news organizations that view their discursive spaces as assets and a way to keep readers engaged with their product may resist federated commenting systems because such systems would likely dilute the uniqueness of the space they are hosting. Thus, while this development could be beneficial for the internet's ability to serve as an extension of the public sphere, news organizations may resist it for practical or business reasons.

Fourth, the final theme sought to directly address one of the barriers, *homogenization* (Albrecht 2006; Dahlberg 2001), by proposing solutions that strove to increase participation from a wider range of individuals. In particular, the notions of incentivizing the process and rewarding commenters was a recurring thread in these submissions, though there was little agreement about how this should be accomplished. Nonetheless, this arguably speaks to a difference in how these innovators and professionals in traditional news organizations view the audience, with the innovators favoring a more active conceptualization wherein readers are viewed as active contributors to the journalistic product, such as by fact-checking content, and the news professionals favoring a more passive conceptualization in which users are primarily consumers of their product (Domingo 2008). It is worth noting that the majority of these proposals would require some form of registration or record-keeping in order to ensure that commenters are rewarded, and many of the aforementioned considerations would therefore apply. However, several proposals would be inexpensive for news organizations to implement—such as simple badge systems and the potential for top commenters to receive access to prominent spaces that are more tightly integrated to the news product—and may thus merit serious consideration. Additionally, these submissions touched upon the obstacle of *selective exposure* (Pariser 2012; Sunstein 2001). Indeed, central to a number of these submissions was the importance of exposing readers to divergent viewpoints, particularly through the leveraging of advanced analytical tools that are able to identify and pair alternative perspectives. In doing so, these systems could well augment the heterogeneity of discussions and subsequently enhance the positive effects of deliberation (Gutmann and Thompson 1996; Price, Cappella, and Nir 2002; Wojcieszak and Price 2012).

Rethinking Approaches to User Comments

The news profession faces a vexing challenge amid the Wild West of user comments online: allowing readers to express themselves fully while maintaining a sense of civility. Some news organizations have sought to shed the technological and gatekeeping hassles of managing comments by outsourcing to Disqus and Facebook Connect, or, in a few cases, abandoning comments altogether (Sonderman 2012). However, as one observer noted, these are largely cosmetic, rather than structural, approaches to re-imagining systems for news discourse online:

> Talking to people at newspapers makes it seem as if the future of comments is all social log-ins and filtering algorithms. But these are really just tools for putting a lid on commenting culture's excesses, not *rethinking the relationship* between creators and commenters in more fundamental ways. (Erard 2013, emphasis added)

Many of the proposed solutions analyzed here present an opportunity to rethink, in a larger fashion, the role of commenting in the development and perpetuation of a democratic public sphere. However, these solutions are not cure-alls, and offer both promise and peril: on the one hand, the possibility for relatively low-cost, easy-to-build systems that can more efficiently moderate comments while also facilitating more civil, cohesive, and diverse discourse; yet, on the other hand, the lingering danger of designing new systems that perpetuate old problems such as fragmentation, filter

bubbles, and homogenization. News organizations should consider such questions as they continually revisit their relationship with audiences and the contribution afforded by user-generated content, in commenting spaces and elsewhere.

However, for all this potential for rebooting the structure and culture of news discussion online, there is a clear limitation associated with these contest submissions. These were ideas—including some rather pie-in-the-sky notions—that were developed conceptually but not translated into prototypes and practice, let alone plugged into the complex social and technological systems that are news organizations today. Nonetheless, in attempting to apply a technological fix to the broken system of news commenting online, these submissions offer a window into the potential re-imagination that may yet occur as journalism increasingly turns to technologists and Web developers for solutions to the problems ailing the news industry and profession in the digital environment (Lewis and Usher 2013).

This article contributes to the literature on the internet and the public sphere by evaluating how those at the cutting edge of this journalism–technology intersection are rethinking online discursive systems in ways that address—or fail to address—contentions about the ability of the internet, and of news commenting spaces in particular, to serve as an extension of the public sphere. Even if many of these proposed ideas never materialize, they point to fresh directions, conceptually and empirically, that could guide future research. Such research might consider not only the additional challenges posed by the Knight-Mozilla News Technology Partnership but also the latter stages of the events, including those ideas that advanced and those that failed to advance, as well as more recent challenges. Additionally, there is ample room for the study of innovators' motivations for their participation in these contests, as well as the values that underlie their proposals.

In conclusion, through a re-imagining of the manner in which spaces for online news discussion should connect, moderate, invite, and organize discourse, these news innovators proposed a number of solutions that might not only increase both the quality and quantity of discourse but also further unite multiple discursive spaces. If executed carefully, the proposed solutions could advance many of the characteristics identified by Dahlberg (2007a) of an ideal deliberative space—namely greater inclusivity, freedom, equality, respect, and reason. Additionally, the proposals arguably partially address many of the core concerns raised by scholars over the ability of the internet to serve as an extension of the public sphere (Albrecht 2006; Papacharissi 2002, 2011), namely by making discussions more accessible, coherent, diverse, and rewarding. As promising as these ideas are for the ability of the internet, and of news commenting spaces in particular, to serve as an extension of the public sphere, it is worth keeping in mind that "the Internet, as all new media technologies, can provide a useful *tool* or the *basis* for a public sphere, but it cannot itself create such a space" (Iosifidis 2011, 626, emphasis in original). Additionally, many of the proposals remain untested and carry with them the potential to retard this transformation by hindering participation, further marginalizing unpopular ideas, and proliferating filter bubbles. Thus, going forward, it is important for scholars and practitioners alike to better understand how technological innovations in journalism might perpetuate, rather than overcome, the present barriers that challenge the ability of the internet, and of news commenting spaces in particular, to effectively extend the public sphere.

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NOTES

1. We use the term "news innovator" or simply "innovator" to reflect the diverse mix of academics, journalists, technologists, and others who responded to the challenges (see Lewis 2011).
2. The complete call for submissions for the "Beyond Commend Threads" challenge may be found, as of writing, at https://drumbeat.org/en-US/challenges/ beyond-comment-threads/full.
3. While connecting citizens to political information and to elected leaders and uniting individuals and enhancing communal values may have been byproducts of the proposed solutions, these considerations were not among the key stated objectives of the challenge. We thus focused on the deliberative model because it is most closely tied to the language used in the challenge, which likely shaped the textual representations of the innovators' ideas.
4. An alternative perspective contends that anonymity is beneficial to Habermas' conception of rational-critical debate, as it helps to level the playing field for all actors through the removal of identifiers that may signify status, credibility, or other cues, thus allowing arguments to be assessed on their merit (Akdeniz 2002).
5. In early 2012, the Knight-Mozilla News Technology Partnership was rebranded as Knight-Mozilla OpenNews; this paper, however, refers to the original name used during the time of the contest (2011). This initiative has since been extended until 2016.
6. At the time of this paper's submission, the website hosting copies of all submissions (https://drumbeat.org/) was in the process of transitioning. However, links to all submissions remained available at https://drumbeat.org/en-US/ challenges/beyond-comment-threads/all_ideas/.

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Rodrigo Zamith, (author to whom correspondence should be addressed), School of Journalism & Mass Communication, University of Minnesota, USA. E-mail: zamit001@umn.edu, Web: http://www.rodrigozamith.com

Seth C. Lewis, School of Journalism & Mass Communication, University of Minnesota, USA. E-mail: sclewis@umn.edu, Web: http://sethlewis.org/