

Lost in the Ashes:  
A Case Study Demonstrating the Importance of Embracing the Share Economy for  
Environmental and Scientific Journalism

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BY

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Abstract

Due to the economic downturn in the American market, many U.S. news organizations are unable to perform their social role at the previous scope and scale, and have reduced staffing, coverage and services to their consumers. Specialty beats like science and environmental reporting have been hit particularly hard, and some national news organizations (such as CNN) have cut such specialty beats entirely. On December 22, 2008, floodwaters breached a retention pond wall at a power plant managed by the Tennessee Valley Authority, releasing a large mixture of water and fly ash. Though the event would eventually be called “largest environmental disaster of its kind in U.S. history” and would be rated as “50 times worse than Exxon Valdez,” national media were slow to report the events or their implications, despite extensive coverage of local media and bloggers. This paper examines the limiting factors of 20<sup>th</sup> Century competitive culture and argues that one of the biggest challenges facing national media properties in regards to the civic function of surveillance is their unwillingness to adapt to the “share economy” utilized by new media approaches to journalism. Consulting classic research literature discussing the motivational and performance differences between cultures of competition and collaboration, the paper suggests a change in culture will be vital for existing news media to survive the new media revolution.

## Introduction and Literature Review

In most societies knowledge is power, but in a democracy that power is diffused, making communication lines vital to avoid manipulations of power. American history is full of examples of media power serving as a check for corporate and political malfeasance. For example, Gentzkow, Glaeser and Goldin (2006) suggested that the growth of the information-oriented press directly led to a reduction in governmental corruption between the Gilded Age and the Progressive Era.

Comprehensive political and social coverage is expensive, and historically newspapers have leveraged their large profit margins (22.3 percent as recently as 2003, gained by monopoly power in the local market and control of the costs of production) to support public good. But in recent times, these profits have fallen – down to an average of 11.5 percent in 2007 (Morton 2008) – with a constant decline likely to continue.

Media critics, practitioners and scholars alike have expressed concerns about the resulting “... cost to democratic values, as newspapers lose their ability to cross-subsidize public service journalism” (Starr 2009). American society needs a vibrant public discourse in order for its members to consider, weigh, and accept responsibility for the choices they make (Yankelovich 1991, 6).

However, others have argued that an inflexibility of culture and short-sighted leadership have kept the news industry from adapting to a changing culture:

What’s going on is serial suicide on the part of the companies that own most of America’s newspapers, not, as some apologists suggest, serial murder by evolving technology, changed societal circumstance, or altered public taste (Merritt 2005, 4).

Such critics have pointed out that recent cultural developments may have upset the tenuous balance between democracy and capitalism, forcing news organizations to choose between their two masters:

...democracy is an engine of a certain kind of equality, whereas capitalism is an engine of a certain (different but no wholly unrelated) kind of *inequality*. Because there is both an economic demand for news and a political demand for it, journalism functions in both spheres at once, and is a nexus where those tendencies conflict (Scheuer 2008, xiv).

Concerns about the bottom line and an adherence to traditional economic models have hampered news organizations' ability to take advantage of new economic models, such as the search economy and the long tail (Stevens and Rivas-Rodriguez 2007).

The most significant difference between new media participants and traditional media efforts on the Web has been the utilization of the "share economy," a social arrangement that leverages the sharing of resources to capitalize upon relationships and network cooperatives (Lessig 2008, 118). Traditional news organizations tend to value the capitalism-driven economic models that emerged following the Industrial Revolution. These values dominate American society, which has "been trained to equate success with victory, to equate doing well with beating someone" (Aronson 1976, 152).

But from the beginning of the age of mass culture, the exclusive utilization of competition strategies has been criticized, such as when Whittemore (1924) found that competition leads to faster work, but that the quality of work is generally poorer (245). Culbertson (1985) pointed out that 19<sup>th</sup> Century American companies performed poorly, and that it was the tightly regulated controls of the war year that led to the "production miracle" (3-4). In 1976, Johnson et. al. performed a comprehensive review of all 122 studies of the effects of competitive and collaborative models from 1924 to 1980: 65 found that cooperation results in higher achievement than competition, eight found competition to result in higher achievement, 36 found no statistical significance. When the researchers examined the effects of individual efforts against cooperative efforts, they presented 108 studies that found cooperation leading to higher achievement, six that found independent work resulted in higher achievement, and 42 that found no significance. These results were consistent for all age groups and subject areas.

Research into competition cultures have found that creative productivity (such as writing) is particularly hampered by competition (Adams 1973, 16-17), that the artistic ability of children is hampered by competition (Amabile 1982, 576), that competition leads to extrinsic motivation, decreases intrinsic motivation (Johnson and Johnson 1985) and that the decrease in intrinsic motivation leads to lower performance in long term (Deci 1971, 114; Deci 1972, 119-120). In the corporate setting, competition often results in lower overall performance, because employees exert significant effort to work against each other (Blau 1954). Similar studies show the adverse affects of competition among

academics (Helmreich et. al. 1980), airline pilots (Helmreich 1982), and airline reservation agents (Helmreich et.al. 1986).

In the field of journalism, McElwaine (1983) wrote that fierce competition over Beltway politics lead to a "... pervasive rivalry that ... can produce depression, anxiety and insecurity, leading many to seek psychiatric aid" (63).

Competitive forces have particularly negative affects for science and technology news. Winsten (1985) found that competition among journalists led to a "strong motivation to distort their coverage" (8) that held disastrous effects for the field:

The result has been a spiraling competition, sometimes characterized by exaggerated claims, in which 'science by press conference' has begun to replace the traditional mode of scientific discourse (14-15).

In his classic tome examining the effects of competition on American culture, Kohn (1992) argued that competition between news organizations meant,

"the public gets less information over the long run than they would have access to if the various news organizations worked together. Moreover, news stories are more likely to be inaccurate and even irresponsible as a result of competition" (55).

Kohn concluded that small-scale cooperative competition would be more productive (78).

In recent months, the drawbacks of competitive corporate culture to science and environmental coverage have become more apparent: as media organizations tighten their collective belts, "specialty reporting" appears to be one of the first priorities for cost reduction. Perhaps no greater exemplar of this trend was the decision in December 2008 by CNN to dissolve its entire science, technology and environment news staff. Claiming to want to integrate special topic coverage into the regular editorial divisions of the organization, the organization drew concern from environmental journalists (Brainard 04 December 2008).

## Method

This article examines how specific news media formats covered a particular collection of news stories, the events surrounding the Tennessee Valley Authority coal fly ash storage pond breach in late 2008 and the effects of the displacement of approximately a billion gallons of toxic materials. By examining the coverage presented

in print, broadcast, blogs and *YouTube* videos, comparisons of coverage attributes were analyzed, as well as the collaborative activities utilized in each medium. The goal of this work was to construct a qualitative case study of information presented and flow, but quantitative measurements were employed to consider the attributes under scrutiny.

For the print, broadcast and blog media, the author consulted Lexis-Nexis and conducted a search of stories mentioning “coal,” “ash,” and “Tennessee Valley Authority” occurring between December 22, 2008, and January 22, 2009. The population of stories was then culled to remove duplications (mostly resulting from the large number of Associated Press stories on the subject), editorials and letters to the editor. Other removals included content applicability (two other ash events occurred in early 2009, and the stories that did not advance the events of the initial spill were omitted). The resulting sample contained 102 print stories, 28 broadcast stories, and 72 blog posts.

Because *YouTube* played an instrumental role in the presentation of this story, the author collected and coded clips that were posted. Because no permanent archival list of *YouTube* clips exists, the author cataloged the attributes of each video available via utilization of the search terms, as well as those featured and promoted through coal ash and clean coal advocacy blogs. The resulting 187 videos were then culled to remove reposted clips from broadcast news media, resulting in a sample of 69 video clips.

Central to the goals of the article was the measurement of journalistic attributes (in particular, the presence and number of both official and non-official attributed quotations) as well as the measurement of interdependency activities (in particular, the presence and number of links, self-referenced materials and external references to additional material). In addition, the researcher constructed a rudimentary timeline of media offerings to discern insight into the diffusion of facts and arguments within particular media formats and across all formats, using the day as the unit of analysis.

For each story in each medium, the author recorded the number of internal and external links to additional media sources, the number of official sources quotes (for the purpose of this study, official sources are those who represent an organization or provide expert testimony), the number of nonofficial quotes. The author kept a running tally of the total number of sources, as well as the number of unique sources used. The author

also took descriptive notes on environmental and policy framing, though these codes were only used for descriptive purposes in this article.

### Case Study

At 12:30 a.m. on December 22, 2008, reports arrived that floodwaters had breached a retention pond wall at a power plant managed by the Tennessee Valley Authority, releasing a large mixture of water and fly ash (the toxic byproduct of coal incineration). Early reports put the release at 1.7 million cubic yards of ash, making the contamination 50 times larger than the 1989 Exxon Valdez oil spill (DeWan 24 December 2008). In the next few days, the event was labeled as the “largest environmental disaster of its kind in U.S. History” (DeWan 27 December 2008).

Local media (“terry” 22 December 2008; Paine and Sledge 23 December 2008; White 23 December 2008; “Editor” 23 December 2008), bloggers (David 22 December 2008; “danawv” 22 December 2008; Overland 23 December 2008) and several *YouTube* users were quick to respond to the story, and the AP ran an early version of the story at 6:58 a.m. (“TVA Dike Bursts in Tenn.; 15 Homes Flooded” 22 December 2008). But national news media were slow to pick up the story, or discuss the environmental or political ramifications of the disaster. Indeed, the *New York Times*, National Public Radio and CNN did not begin to cover the story until two days after it occurred (Dewan 24 December 2008).

Nor did the lack of coverage go unnoticed. A post the day after the event by guest blogger Wendy Redal (23 December 2008) to the official blog of the Center for Environmental Journalism (CEJ) at the University of Colorado at Boulder drew the following response from CEJ director Tom Yulsman:

If you haven’t heard about the events she describes below, you’re probably not alone. I found no mention of the catastrophe on the Web sites of the New York Times, CNN or Fox News, and a Google News search only turned up stories by local Tennessee media. I’m not surprised that CNN has missed the story, since they laid off all of their science and environmental reporters and producers, leaving them utterly incapable of adequately covering an incident like this. But why the New York Times has been silent is quite a mystery” (Yulsman, 23 December 2008).

Of course, the *New York Times* (as well as the *Washington Post*, the *Los Angeles Times* and a number of metropolitan and smaller market newspapers), cable outlets such as CNN and MSNBC, and local television station did cover the story, but each media format did so in particular ways and at different paces.

In the month under scrutiny, the story would demonstrate the difficulty of presenting coverage of such complex topics related to environmental disasters. The affect on citizens, the disruption of commerce, the political exchanges between the governmental agencies and the Tennessee Valley Authority, the question of contamination in the water supply, controversies over the cleanup methods, debates over “clean coal” technologies and the future of American energy policy and a variety of other concerns converged into 300 acres of spoiled property.

In addition, a second (minor) spill in Alabama and the entry of celebrity activist Erin Brockovich would at times draw increased attention to the issues in the pres and at times distract attention away from them. This case represents a true test to the competitive status quo of journalism: just as many news operations reduced their specialty coverage, they were presented with a complex case that demanded special attention.

### Analysis

Different media formats contained stories that were presented at different rates and that contained different attributes. Each will be briefly presented in turn, and the implications will be presented in the discussion section.

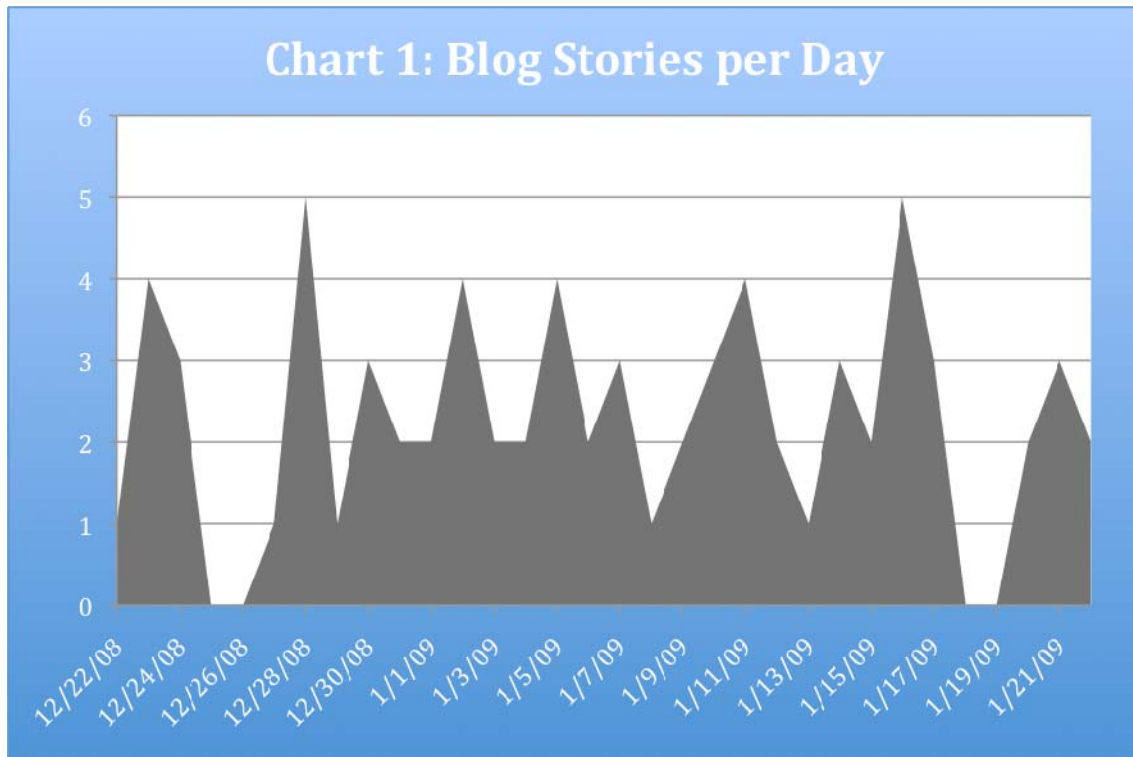
### *Blog Coverage*

Other than the initial AP stories, bloggers were the first to cover the spill, the community reaction and the cleanup efforts. In the 72 blog posts analyzed from 58 sources (more were present, but the study only examines those captured by Lexis-Nexis), 339 hyperlink references to legacy media sources were presented, (averaging 4.7 per post) as well as 144 hyperlink references to other blogs (an average of 2 per post).

In terms of sourcing, only one out of 10 posts presented original quotes from official sources (seven in all), while the uses of nonofficial quotes (mostly quotes from

citizens and local business owners) appeared in 22 posts. The majority of blog content appeared to be links to primary news coverage and commentary (as expected).

The distribution of posts appears below:



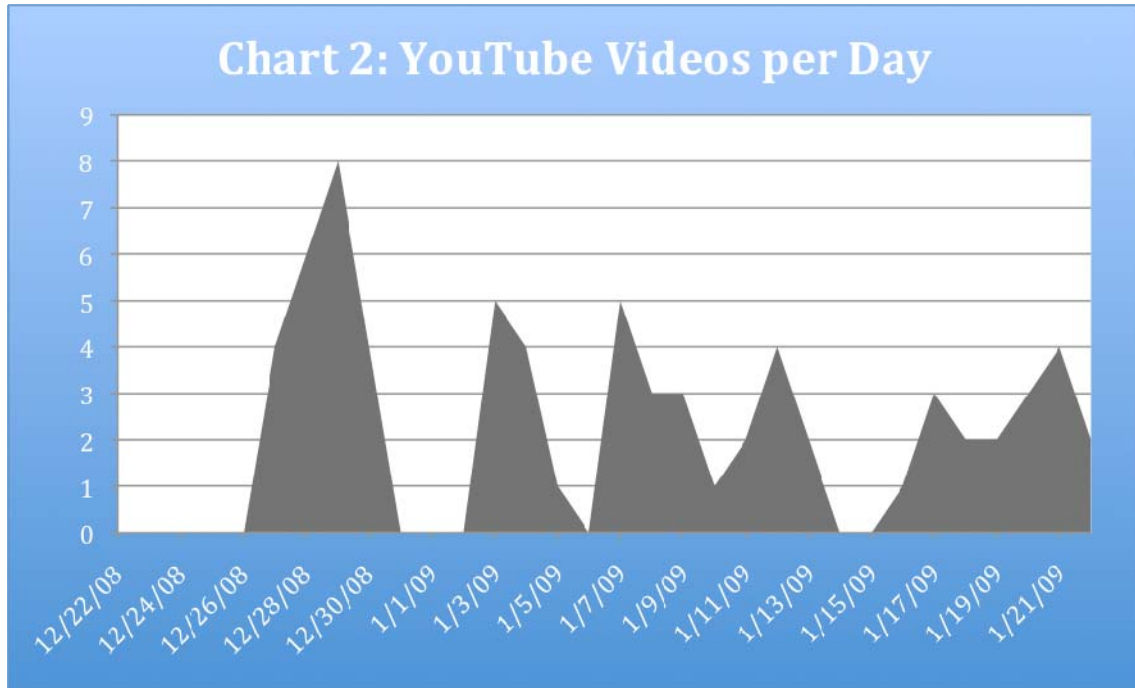
### *YouTube Coverage*

Like bloggers, YouTube artists presented and promoted a lot of materials and continued to do so (in spurts) throughout the period under review. In terms of story content, more than half of the 69 YouTube posts featured official sources (n=36), mostly interviews with scholars, policy advocates and researchers for the purpose of education on the toxicity of fly ash, but 11 stories featured interviews/confrontations with TVA personnel. In contrast, the 69 YouTube videos contained 93 nonofficial interviews, mostly gatherings of citizens and business owners affected by the spill.

Other content coverage included remixing news footage into music videos interspersed with original interviews and the presentation of research data, the coverage of speeches at protest events and clandestine surveillance of cleanup efforts with reportage voiceovers.



A few YouTube posts contained links to other material, but not enough for this to be a significant component of the population's coverage. The distribution of posts appears below:



### *Print Coverage*

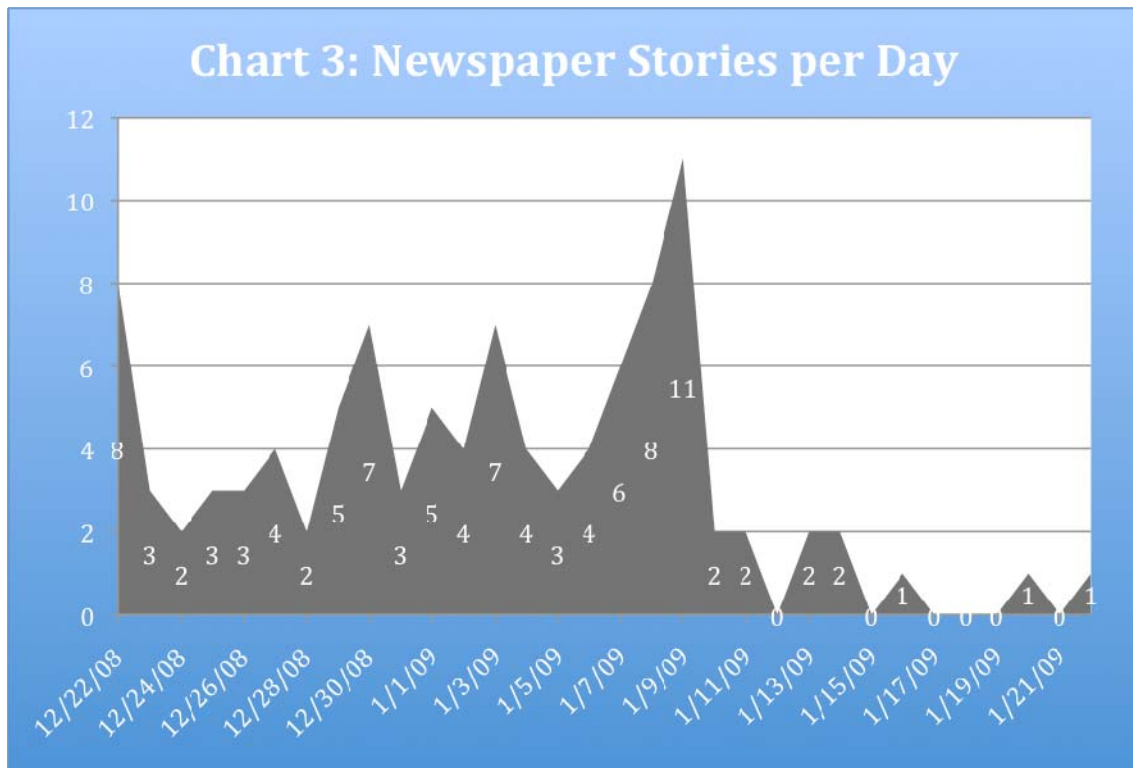
The 103 print news stories were collected from 24 different publications. The vast majority of the stories originated with the Associated Press (whose initial story was released mere hours after the initial spill). Most newspapers did not cover the spill until the *New York Times* published its first story on December 24. The *Chattanooga Times Free Press* published the largest number of non-AP stories.

Within the stories, official sources were presented 237 times (of 127 unique sources), and nonofficial sources were presented 103 times (of 28 unique sources), making newspapers more than 4 times more likely to construct stories around official discourse. Unsurprisingly, the newspaper stories that were presented on the Web did not link to external content outside of the news organization's product line, and only four in the sample even linked to their own previous coverage related to the spill.

**Table 1: Newspaper coverage of Tennessee Valley Fly Ash Spill, Dec. 22, 2008-Jan. 22, 2009**

Publication	# of stories	Officials quoted	Nonofficials quoted
AP	44	98	16
Chattanooga Times Free Press	21	77	15
New York Times	7	26	6
LA Times	4	3	3
UPI	3	1	3
Chicago Tribune	2	2	0
Houston Chronicle	2	0	0
Lexington Herald	2	0	5
Washington Post	2	0	0
Wall Street Journal	2	0	0
Arkansas Democrat-Gazette	1	2	0
Austin American-Statesman	1	3	0
Charleston Gazette (West Virginia)	1	4	0
Charlotte Observer	1	4	0
Chicago Daily Herald	1	0	0
Deseret Morning News	1	0	0
Macon Telegraph	1	2	1
Pittsburgh Post-Gazette	1	1	0
Post and Courier	1	5	1
Sarasota Herald-Tribune (Florida)	1	0	0
Star Tribune	1	2	0
Times-Picayune	1	3	0
Tulsa World	1	2	0
Virginian-Pilot	1	2	0
<b>Total</b>	<b>103</b>	<b>237</b>	<b>103</b>

Though the story coverage initially lagged behind *YouTube* and blog coverage (except for the AP coverage), the print coverage proved to be more consistent throughout the period under review. Multiple stories appeared every day until a second ash-related leak in Alabama and the arrival of Erin Brockovich on the scene created a spike of coverage on January 9. After this spike subsided, the coverage of the original spill dies down:



### *Broadcast Coverage*

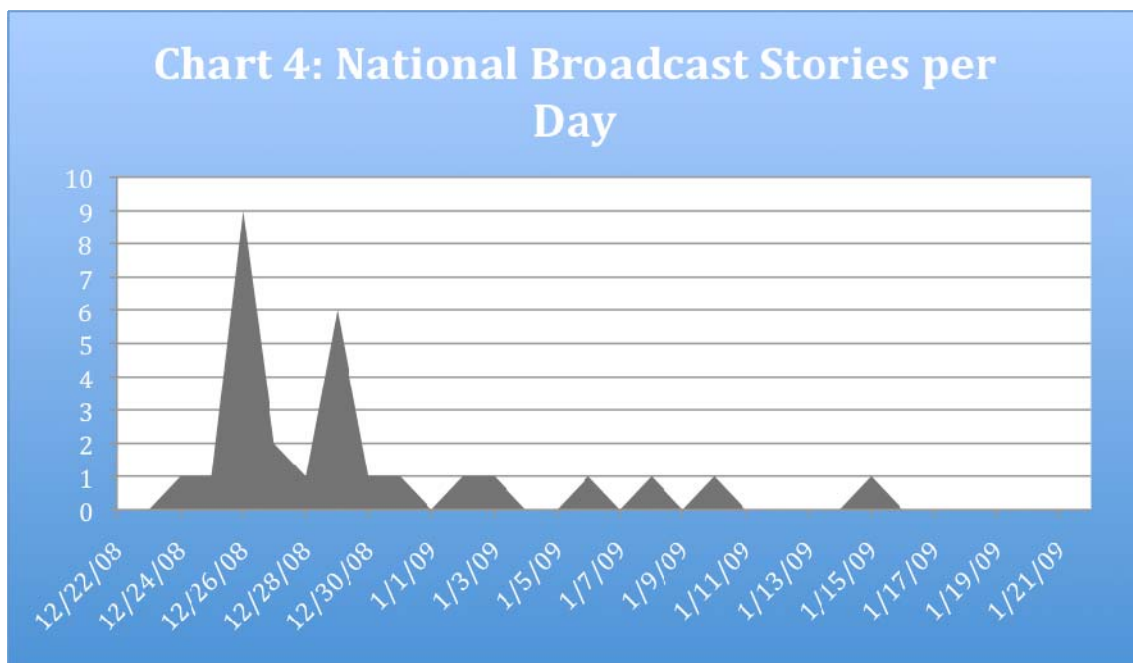
Network and cable television dragged behind all other forms of coverage. More than two days after the initial incident, the *CBS Evening News* ran the first full story (CNN had offered brief AP rewrites in the early days, but had not offered much details and no original reportage). On December 26, NPR aired its first report, and the network would provide the most consistent broadcast coverage.

Like their print counterparts, broadcast outlets tended to dedicate the most time to official sources, averaging 1.5 official sources per story (42 uses of 28 unique sources), while unofficial sources were presented in only eight out of ten stories (22 uses of 13 unique sources):

**Table 2: Broadcast coverage of Tennessee Valley Fly Ash Spill, Dec. 22, 2008-Jan. 22, 2009**

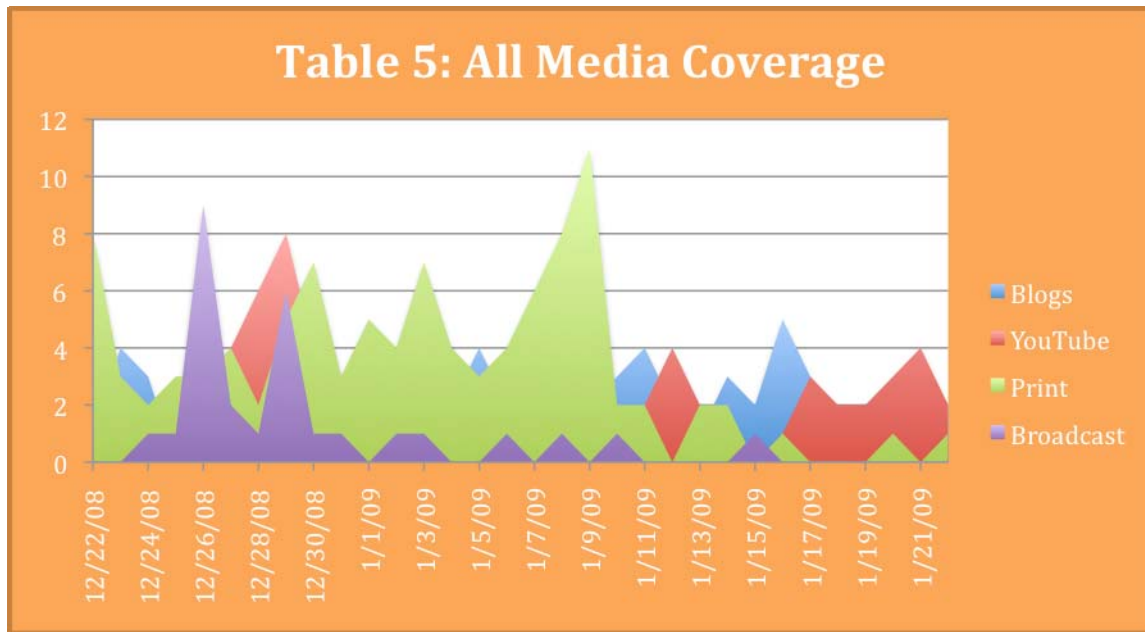
Network	# of stories	Officials quoted	Nonofficials quoted
NPR	10	18	6
CBS	5	5	6
CNN	5	5	6
NBC	5	10	2
ABC	2	4	2
MSNBC	1	0	0
<b>Total</b>	<b>28</b>	<b>42</b>	<b>22</b>

Broadcast outlets offered less overall coverage than any other medium, and the coverage came in sporadic bursts:



*Overall Media Coverage*

Though each medium emphasized different kinds of stories and offered coverage according to different distribution schedules, the combined coverage of all media demonstrates an interesting compilation of coverage patterns. When the distribution of news stories from each medium is combined and presented within a single data set, the peaks and valleys of individual media appear to compensate for one another, ensuring that few days in the month under consideration that presented less than four mediated treatments of some aspect of the ash spill story:



Of course, the author does not presume that consumers consult all four types of media on a regular basis, but the fact that new media content is available even when legacy media coverage wanes poses interesting considerations for collaborative behavior within media organizations.

#### Conclusions and Discussion

Though several traditional media outlets did eventually cover many of the issues related to the TVA fly ash spill (for example, see Editorial 22 February 2009; Walsh 10 January 2008; and Reilly 25 December 2008), many (including writers at environmental agencies and journalism review sites) argue that the early coverage provided by local media, bloggers and *YouTube* users was more timely, more accurate, and more comprehensive (Brainard 20 February 2008; Gahrn 23 December 2008).

Because of the limits of organizational coverage and the inability to share resources across organizations, niche interest publications, bloggers and local media would appear to have an advantage covering specialized beat topics like the environment, a situation that should concern larger, national news organizations. Bloggers and *YouTube* artists presented content earlier and in greater volumes than their legacy media counterparts, but print media eventually produced the greatest volume of coverage.

In terms of story structure approach, it is interesting that new media forms appeared to focus more on the human-interest frames of story telling. Bloggers and *YouTube* artists presented a greater proportion of content devoted to the residents affected most by the ash spill. Print and broadcast media appeared provide heavier reliance upon official sources, and presented a more comprehensive coverage of the interaction of government and corporate agencies in the debates surrounding the cleanup. However, it should be pointed out that the documentation of the TVA's noncompliance with established cleanup and disposal guidelines came almost exclusively from bloggers and *YouTube* artists who produced content from the site. Legacy media provided the firmer grasp of policy and procedural developments, but new media sources appeared to provide greater access to the actual efforts and conditions on the ground.

In terms of collaborative behaviors, only bloggers appear to utilize the combination of different sources to extend coverage. Broadcast outlets occasionally refer to newspaper reports in the course of their coverage, but these references normally lack the specificity needed to locate and consult the original reportage. Newspapers occasionally refer readers to their own previous reportage, but do not tend to refer to or provide links (in their online versions of stories) to content produced by their competition.

A striking exception to this observation are the 61 stories produced by the KNS Media Group as part of *KnowxNews.com*. Though it does not appear in Lexis-Nexis, the *KnoxNews* site provided the most extensive coverage of all story angles, save the recorded voices of the resident affected. On December 23, the site presented a list of all media and blog coverage of the TVA spill, and continued to add to it until the list included 434 media expressions dealing with the topic in January 2009 (Lail 23 January 2009).

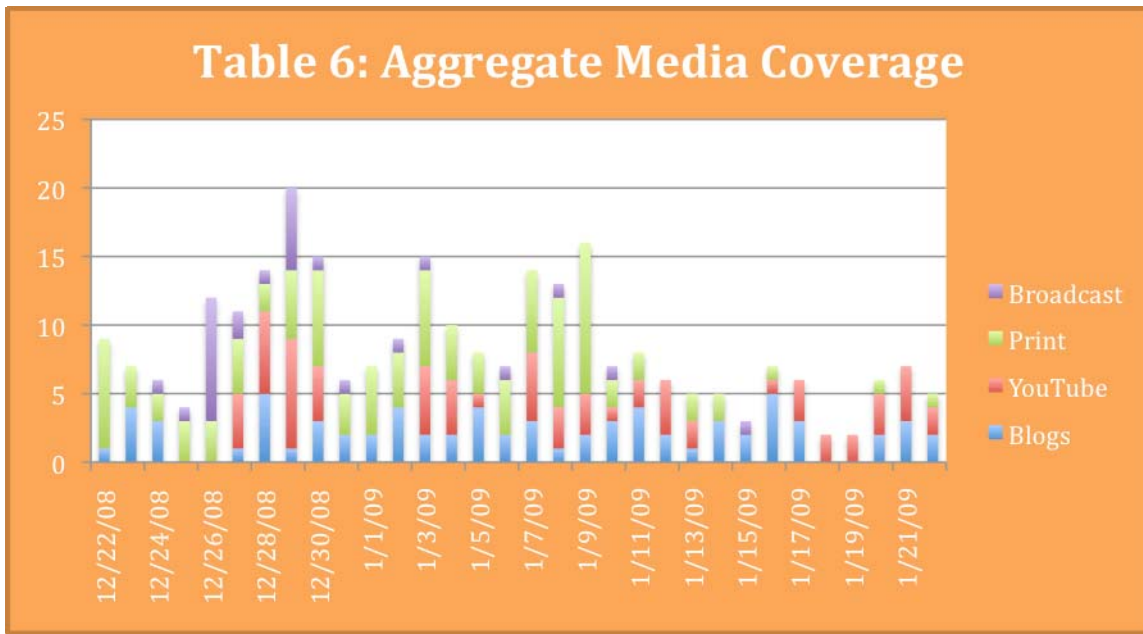
The coverage presented by CNN was particularly worrisome. Despite its claims of increased performance by mainstreaming science and environmental coverage (Brainard 04 December 2008), the network performed poorly relative to other media outlets in this case. The first story of any originality or depth appeared five days after the initial events, running in the third featured segment of the morning news coverage (Holmes et al. 26 December 2008). The second treatment later the same day illustrated the lack of intensive

coverage when anchor T.J. Holmes introduced the segment by claiming the cable network had been “telling you this story the past couple of days here in the CNN Newsroom” and then proceeded to claim the spill had affected “... at least 15 homes that we know of ...” (Robertson et al 26 December 2009, 4), a fact that had been corrected by the Associated Press on December 22 (the initial estimate had been 15 during the early hours of the spill, but was reduced to 10 and expanded to an official number of 12 by the end of the first day). Even this coverage was little more than an interview with one of the citizens and a policy advocate who had already been quoted in newspapers and other broadcast outlets more than a dozen times in the previous days.

This example illustrates the inherent problem with competitive approaches to journalistic coverage: the overlap in topical coverage is greater than if outlets coordinated their efforts. A growing body of multidisciplinary research suggests that we live in an increasingly networked world that demands forms of organizing resources that defy conventional bureaucracies and corporate firms (Anderson 2006; Berners-Lee and Fischetti 1999; Bricklin 2006; Floridi 2009; Howe 2008; Jenkins 2008, Lessig 2000, 2002, 2005; Shirky 2008; Sullivan November 2008; Stevens and Rivas-Rodriguez 2007; Surowiecki 2004; Tapscott and Williams 2008). Converging technologies, scarcity of resources, and accelerated media cycle and rising organizational interdependence are factors that explain the call for increased inter-organizational collaboration.

Currently, bloggers and *YouTube* artists are not considered an official part of the journalistic record. Because a significant amount of their content offerings are commentary in lieu of original reporting (which they often direct their readers and viewers to via hyperlinks), their contributions are not generally considered significant by professional newsgatherers. However, in this particular case, many of the bloggers and *YouTube* artists provided original reportage. For example, no broadcast outlet presented the images of TVA workers violating federal regulations during the cleanup process that *YouTube* included.

When one realigns the earlier comprehensive coverage table to include the coverage of print, broadcast, bloggers and *YouTube* together (treating the different contributions as part of a comprehensive collective rather than a collection of disparate units), the coverage itself looks more consistent and comprehensive:



If media outlets could learn to coordinate their efforts, to join the network of informational resources, one could imagine the collection, production and dissemination of today’s news content would become more efficient and cheaper. However, the real question is what potential gains American society could gain with a larger number of active newsgathering agents who share information resources.

Regardless of the future of the broader debate, this case does seem to at least suggest that so-called specialty topics like science, technology and environmental stories appear better served by a collaborative approach to coverage.

#### Limitations

This article attempts to capture the disparate attempts to cover a complex collection of stories across multiple media formats. Because of the non-institutional nature of new media, presenting an authoritative collection of coverage is a much more subjective process than collecting a defensibly authoritative collection of legacy news media sources through Lexis-Nexis. Undoubtedly, the author missed *YouTube* videos and blogs that were presented under alternative taxonomy tags or not widely viewed enough to generate the attention needed for identification purposes.



The author relied on the blogs listed in Lexis-Nexis in order to create a representative sample roughly equivalent to the sample collected for legacy news media outlets, but this sample admittedly excludes many of the blogs not archived by Lexis-Nexis. Similarly excluded were the dozens of Twitter feeds that provided coverage of these events, primarily because the best ones incorporated links to material already under review and the majority mixed coverage of the events with many tweets about other events and matters of a personal nature, making the analysis difficult to standardize.

Thus, microblogging efforts are underrepresented in this article. Perhaps future work will plan accordingly to consider the specific challenges related to gather microblog content.

A great disappointment was the charged archives of Tennessean. An archive search appears to return a list of about a dozen stories related to the ash spill, but the organization charges \$2.95 per archived article (with volume pricing available). This practice broke the links from several blogs and would prevent anyone interested in following the story from the beginning from gaining the context needed to understand primary issues.

Finally, this work did not examine the textual content of broadcast sites. Fox News, which seems not to have dedicated any editorial resources in their broadcast segments, did post a half-dozen textual stories on their Web sites that appeared to be rewrites of Associated Press stories. CNN did include AP stories on its site, as well as the transcripts of the broadcast stories. In the interest of focus, this project ignored such offerings, assuming for the time being that contemporary broadcast sites primarily repurpose content in their textual spaces.

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