

THE INTERNET AND NEWS

Changes in Content on Newspaper Websites

KEVIN G. BARNHURST

Abstract

Journalists justify their professional practice as a service that informs the citizenry necessary for democracy, but trends over the last century, since the rise of professional aspirations among journalists, have involved a steady move away from textual practices of current event coverage centered on citizens and nearby places and toward journalists' own opinions of more distant issues. But the rise of the internet, in direct competition with print news, has accompanied several shifts in the news journalists produce. A content analysis for three mainstream U.S. newspaper internet sites in 2005 continues a project that has gathered measurements for the same newspapers since the 1890s and replicates a 2001 study, when most U.S. papers had established a presence online. On one hand, politics, as a core topic in public spirited journalism, has continued the older trends for the *who*, *what*, *when*, and *where* in story content: toward relatively long, analytical stories with explanations from officials and groups and references to other time periods and more distant places. On the other hand, accident stories typify the new, emergent news: short, less analytical, event-centered coverage linked to individuals, other current happenings, and an especially local focus. On their web editions, the larger, wealthier news organization tended toward the older news, but the smaller or less profitable organizations moved toward the new kind of news. The focus on current events and local politics may be salutary for the informed citizenry, but the loss of context for events makes it unclear whether the internet is an entirely positive news outlet. (255 words)

Keywords. journalism, internet, news, United States, newspapers, politics, accidents, crime, employment, content analysis

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JOURNALISTS ARGUE THAT THE INTERNET HAS CHANGED THE NEWS fundamentally. Jim Brady, executive editor of the *Washington Post* online version, points to multimedia, continuous deadlines, blogs, and participatory journalism ("High Velocity Journalism," *Quill*, October/November 2005, pp. 64–67). News organizations have reorganized, creating a Continuous News Desk, and one of its occupants at the *New York Times*, Neil Chase, says that online journalists "cover their subjects more deeply, in new ways, and deliver more to the reader than was possible before" ("Feeding the Web While Reporting the Story," Winter, p. 64). Journalists writing in the same 2006 special issue of *Nieman Reports* see the internet as a "dual challenge" (p. 62), to produce print and online news simultaneously. Two years later, professionals in the same venue expressed concerns: Sam Stein, a Washington, D.C.-based political reporter for the *Huffington Post*, objects to, as his title puts it, "Fast-Paced Journalism's Neglect of Nuance and Context" (Summer 2008, pp. 48–50), and Russ Walker, who oversaw 2008 election coverage at *washingtonpost.com*, headlines the fact that, "For Campaign Coverage, Web Too Often an Afterthought" (pp. 22–24).

Professionals suggest that the new venue for journalism online is "about people's ability to become more fully engaged as customers, families, neighbors, and citizens" (Dan Gilmour, technology columnist for the *San Jose Mercury News*, in "Moving Toward Participatory Journalism," *Nieman Reports*, Fall 2003, p. 80). An editor of the *Online Journalism Review* argues in the same venue that blogs, for instance, build trust by making journalism more personal, transparent, accessible, and accountable (J. D. Lasica, "Blogs and Journalism Need Each Other," pp. 70–72).

These arguments for the public service mission of professional journalism occur on a backdrop of downsizing, industry turmoil, and financial pressures (see Robert Kuttner, "The Race: Newspapers Can Make It to a Bright Digital Future After All—But Only If They Run Fast and Dodge Wall Street," *Columbia Journalism Review*, March/April 2007, pp. 22–32). The *Christian Science Monitor* announced that it would abandon its century-old print edition, a respected institution in journalism that has won several Pulitzer Prizes and had editors preside over the American Society of Newspaper Editors. *Monitor* editor John Yemma announced October 28, 2008, that the internet edition would take over in April 2009, after the closing of the print edition (David Cook, "Monitor shifts from print to Web-based strategy," *CSMonitor.com*, n.p.).

Journalists themselves are good sources for information about

changing practices, which appear as real as the economic troubles of print newspapers. But the impact of those changes on the news itself, what readers and citizens receive, is less clear. This paper continues a long-term project to track the content of U.S. newspapers since the 1890s, exploring the relationships between journalists and politicians as well as audiences through the texts journalists produce. Has news content changed as it has relocated online? If so, what are the implications of that content for an informed citizenry?

Studies of Online News Sites

Studies of newspapers at the end of the last century, as they moved online (see Barnhurst, 2002a & 2002b, for summaries), showed that early thinking about the new medium had a millennial quality, promising to redefine journalism as an analytical and context-providing activity that broke the bounds of geography, with a bright future for journalists and a more-informed public (Koch, 1991). Although newspaper publishers moved quickly to establish web editions, they were slower to add multimedia capabilities, and some observers predicted a catastrophe for journalism if it failed to adapt (Katz, 1997). Reporters had already begun adopting electronic newsgathering techniques, according to surveys (e.g., Ross, 1998). Journalists themselves asserted that working online was changing news stories, making them more complex, with larger access to other events and more background that involved readers (Harper, 1998). A content analysis of local newspaper sites found they excluded some stories that had run in the print editions, to preserve value for subscribers, but the online versions used the exact text from the print versions (Singer, 2001). Media economics research argued that online newspapers focused on local markets, despite the global reach of the medium (Chyi & Sylvie, 2001).

Since the beginning of the new century, studies of U.S. newspapers online indicate that publishers are adopting more web capabilities, but that smaller newspapers lag behind larger ones in interactive and multimedia options (Greer & Mensing, 2004). A content analysis of 83 online newspapers from 1997 to 2003 showed more varied content updated more frequently and with more multimedia, although mostly in the form of reporters' e-mail addresses. The web did not make newspapers more equal, because large and medium newspapers had more sophisticated sites than did smaller newspapers.

But some newspapers may have caught up in recent years. A content analysis of home pages from 24 high-circulation U.S. dailies from 2004 through 2006 showed that the dynamic content increased but tended to be local, rather than national or international, especially at

the smaller of these major newspaper sites (Tremayne, Weiss & Calmon Alves, 2007). Hard news topics had the most dynamic features and most frequent updates, but breaking topics such as accidents and crime showed the most growth in dynamic content. For political reporting, the political blog became a common fixture, increasing the presence of journalist-bloggers' opinions and linking primarily to mainstream sites and sources (Singer, 2005).

Although online news had begun to diverge from print in its form and content, it remained similar in important, especially political, ways of informing the public. A content analysis of *USA Today*, the *Los Angeles Times*, and the *New York Times* found that print front pages and web home pages had similar lead stories initially, but the frequent updates online meant the top stories were usually different for the web editions within twelve hours (Greer & Mensing, 2004). The selection of topics also differed. Web editions favored breaking news and international, crime, and accident stories, but print editions favored analytical coverage and government, politics, health, and sports. Another content study, this one comparing six U.S. newspaper print and online editions, found little difference in the amount of political information aimed at mobilizing readers (Hoffman, 2006). The news organizations in the study ranged across locations, status, size, and content, but what they published useful to citizens was usually identical. Mobilizing information is political content that gives enough information for readers to attend an event (location), to make contact with politicians or political groups (identification), or to use as a model for behaviors and actions (tactics).

Studies of the press online in other countries show similar results. Newspaper sites in Scandinavia, as of winter 2004–2005, failed to exploit the full potential of going online (Engebretsen, 2006). They could have created a “user-controlled, dynamic and dialogic form of journalism” (p. 4), but usually did not. The online editions were more “shallow and superficial in their coverage,” judged by “the length of stories and number of sources” (p. 13). But the papers rejected so-called shovelware, the mere uploading of content from print editions, for almost half of all news stories (and a majority of locally produced stories). A content analysis of two Argentine newspapers, comparing 1995 to 2005, found that content of the print and online editions overlapped more over time as the practice of online updates increased, especially for public affairs stories (Boczkowski & De Santos, 2007). Like the U.S. example, the overlap was greatest when the day for online news ended and for print news began. In Canada, a study of the *Montreal Gazette* in 2001 found more stories and more international coverage online, principally because of expanded wire service

content (Gasher & Gabrielle, 2004). But the print edition was richer in other ways, with more numerous and diverse sources, for example.

Social scientists have continued high expectations of technological progress and share with practitioners the view that internet journalism can and should foster democratic participation. Except for the rare historical study (e.g., Scott, 2005), research on web news content not only tends to ignore the occupational ideology of journalism, which asserts that professional intervention is necessary to the political process, but also tends to scold publishers for their failure to employ the democratizing potential of new technologies.

The new long journalism project attempts to examine content in light of the power relations news texts imply for journalists and their audiences. The project has gathered U.S. data on a century of newspaper content (Barnhurst & Mutz, 1997), as well as a quarter century of television news (Steele & Barnhurst, 1996) and two decades of public radio news (Barnhurst, 2003). Long-term changes in the *who*, *what*, *when*, *where*, and *why* (five Ws) of news content have revealed a dramatic move away from named persons (in favor of groups and officialdom), away from the local scene (toward larger domains), in lengthening stories containing more journalist-centered opinions and interpretations.

A study of electronic form among U.S. newspapers, from several regions and under different market conditions, found that newspaper web editions in 2001 reproduced the substance of their print editions in ways that related similarly to readers (Barnhurst, 2002a). The study concluded that print publishers were using their internet presence as a low-cost placeholder, to guard their market position with local consumers and to erect a barrier to the entry of geographical competitors. A companion study of the sites' electronic content found that news had continued to evolve in ways enhancing the professional standing of journalists (Barnhurst, 2002b). Stories in 2001 were longer, had more explanations of how and why, and emphasized more groups and officials. But the content had also reversed long-standing trends in other ways, with more current events and more interest in things local, or accelerated trends, with more references to other events in history. The internet had apparently become a symbolic goad to journalists, who, fearing its effects on the job market, began finding more links among the events and moving closer to the places where the people act as citizens.

The Study

By the middle of the first decade in the 2000s, the internet was a universal element in U.S. news organizations, online culture had be-

come more interactive, and the time was ripe to examine how the content of news was faring on the internet. This study replicates most aspects of sampling and measurement from the study in 2001 (Barnhurst, 2002b). It uses the same three sites: the national *New York Times*, regional *Chicago Tribune*, and local Portland *Oregonian*. The selection of news outlets is based on a theoretical rationale bridging geographical regions and news organization size and orientation (see Barnhurst & Mutz, 1997), and the selection of sites is based on the main currents in online news development (Barnhurst, 2002a & 2002b).

During three consecutive weeks in late June 2005, a trained assistant drew a purposive sample of stories, because the incommensurable archives to each news site did not allow random sampling (see Riffe, Lacy & Fico, 1998), but also to avoid errors randomization produces in coding related to sequence and production of news stories (Singer, 2001). The time frame excluded the distortions of holidays and other predictable major events, in what journalists call a slow news period best suited to reveal routine rather than exceptional content.

For each topic, the assistant searched the web newspaper, page by page following the order of the site navigation bars, and then used the internal search engine to find other related stories (some of which always fall outside the page linking structure of news sites). Story selection followed the protocol established previously (Barnhurst & Mutz, 1997), continuing until reaching a total of 40 stories per topic from each newspaper site.

In training, coders first calibrated against the previous study by recoding a small portion of the 2001 sample, checking the results against the original coding sheets, and repeating the process until testing close to the same as the original (the main coder for each of the two studies was the same person).

For each story, coders recorded general information about the site, date, and topic of the story, as well as counting the elements of content from the previous study (see Barnhurst, 2002a): individuals and their roles, groups, and their identification; current events, past and future periods, and changes over time; locations ranging from street addresses to foreign countries; and explanations of how and why events occurred. Coders also rated the length of the story (on a scale from 1 for very brief to 5 for very long), its emphasis (from 1 for the most event-centered reporting to 10 for the most general news analysis), and tone (from 1 for negative to 5 for positive, with 3 for mixed, ambiguous, or neutral).

After the initial coder processed a small sample of stories, an identically trained coder went through the same procedure. The reliability

was good (averaging .89) and ranged in predictable ways (from .97 to .80), with coefficients higher for simple counts and lower for the ratings.

Finally, I tested the results for potential sources of error, by comparing them to a general knowledge of the particular news organizations and the categories of content and by testing whether sampling error might account for differences (analysis of variance, *F*, with post hoc Sheffe tests, see the Appendix). What follows presents only results that proved significant in statistical tests and makes clear which are more important in overall size (or *oomph*, see Ziliak & McCloskey, 2008).

Results

The 2005 data contain several startling reversals in trends that had run for more than a century, but the reversals are not uniform across topics and news outlets. The topics had always differed somewhat, but had moved in the same general direction. Over the previous century, all the topics generally ran longer and became more analytical and complex, although politics and jobs stories more so than crime or accident stories. The same had been true of the different outlets, which followed their own courses with the *New York Times* going the longest and most complicated, the *Portland Oregonian* doing the opposite, and the *Chicago Tribune* usually running in the middle. But the news outlets traveled along the same general path over the long run. The results for 2005 suggest a separation in the long-term development of U.S. journalism.

Length, Emphasis & Tone

The first and most simple question is whether the news in 2001 had grown longer, following the trend established over the previous century. On a scale from 1 to 5, news in the print newspapers grew from just under 2 in 1894 to just above 3 in 1994 (Barnhurst & Mutz, 1997, p. 32). By 2001, news stories had grown a bit more, to just above 3.5 on the scale (Barnhurst, 2002b). The 2005 data show a decrease in mean length overall, dropping below 3 on the scale, to a level not seen in the data since the 1960s (see Table 1).

A dramatic shortening of stories (to 1.11) occurred in the *Oregonian*, which had often run the shortest stories of the three newspapers, but in 2005 returned to the brevity of the 1930s. The other two newspapers registered smaller declines in length, marking an overall change unprecedented in the long-term trend. Accident stories, consistently the shortest until the 1970s, when crime stories overtook them, tumbled in length to levels of the 1950s. Crime and political

topics ran shorter as well, but employment stories stayed about the same as in 2001. The relative length of the different topics in the newspaper sites followed long-term trends, except for crime in the *New York Times*, which published longer crime stories than jobs stories. Politics, consistent with the 2001 data, ran longest across all three newspaper sites. The largest differences in length emerge between politics and accidents.

Table 1
Length, Emphasis & Tone

Length as the mean rating of articles on a scale from 1 (the shortest) to 5 (the longest). Emphasis as the mean rating of articles on a scale from 1 (the most event centered) to 10 (the most general news analysis). Explanations as the mean number of times articles explained how and why. Tone as the mean rating of articles on a scale from 1 (the most negative) to 5 (the most positive). All means by content topic and per website.

		Overall	By Topic			
			Politics	Jobs	Crime	Accidents
All Sites	N†	480	120	120	120	120
	Length	2.55	2.94	2.63	2.64	2.00
	Emphasis	3.76	4.48	4.13	3.49	2.93
	Explanations	1.73	1.60	1.59	1.69	1.98
	How	0.84	1.20	0.94	0.73	0.48
	Why	2.94	3.18	3.14	2.59	2.86
	Tone					
Per Site	N†	160	40	40	40	40
New York Times						
	Length	3.64	4.20	3.45	3.70	3.23
	Emphasis	4.24	5.33	4.38	3.83	3.45
	Explanations	0.69	0.98	0.48	0.80	0.50
	How	1.02	1.60	1.28	0.83	0.30
	Why	2.68	2.75	2.58	2.65	2.75
	Tone					
Chicago Tribune						
	Length	2.91	3.40	3.38	3.20	1.68
	Emphasis	3.63	4.23	4.23	3.48	2.58
	Explanations	1.00	0.58	0.43	0.68	2.34
	How	0.66	0.90	0.78	0.55	0.43
	Why	2.70	2.58	2.80	2.33	3.10
	Tone					
Portland Oregonian						
	Length	1.11	1.23	1.08	1.03	1.10
	Emphasis	3.41	3.90	3.80	3.18	2.78
	Explanations	3.51	3.49	3.87	3.59	3.10
	How	0.84	1.03	0.78	0.83	0.73
	Why	3.45	4.23	4.05	2.80	2.73
	Tone					

†The numbers of cases for each site and topic are the same in all the subsequent tables.
One way analysis of variance: *** = p < .001, ** = p < .01, * = p < .05

A more challenging question is whether news grew more analytical, another long-term trend. During the previous century, emphasis on analysis grew on the ten-point scale, starting below 2 in 1894 and peaking at 3 in 1974, before dropping back somewhat (Barnhurst & Mutz, 1997, p. 33). By 2001, the tendency had rebounded, reaching 4 on the scale (Barnhurst, 2002b). The 2005 data show the emphasis

dropped off from its 2001 peak, but still ran in line with the historical trend. The reporting in these newspaper sites was approaching the tendencies in media known for analysis, such as National Public Radio (Barnhurst, 2003).

Among the newspaper sites since 2001, analytical tendencies grew at the *Times*, while declining at the other two newspaper sites, especially at the *Tribune*. Among the four topics, the tendencies stayed the same for political stories and about the same for crime, but went down for the other two, especially accidents, which dropped off by about a fifth of its 2001 level. Note that the articles in the sample are from news columns, not opinion pages. For the topics at each news site, all three news sites continued previous patterns, with the most analysis of politics, followed by jobs, crime, and accidents.

As the news stories grew shorter, they became somewhat less analytical (a relationship found in earlier studies), but although the growth in length reversed itself, news analysis was still higher than in any year studied in the 20th century (Barnhurst & Mutz, 1997). In other words, the long-term trend continued, after an up-tick in the 2001 data.

Some of the potential components of news analysis might include references to the context of other time periods (explored later), as well as the explanations of the *how* and *why*, which journalists include in their stories. The mean number of times news stories in the newspapers explained how and why grew from just under 2 in 1894 to just above 2 in 1994, a small increase that peaked in 1974 (Barnhurst & Mutz, 1997, p. 33). In 2001, news stories from the online editions jumped in these measures (Barnhurst, 2002b), but the 2005 data show a drop to levels not seen since the 1930s. Among the sites, only the *Oregonian* continued to explain the how of news stories in large numbers, and stories on the other two sites contained about the same levels of explanation as they had previously. The topics within the news sites followed previous patterns for explaining how and why, with politics leading, then employment, and crime lagging, then accidents. Accidents received the most explanations in the *Tribune* but the least in the other two sites. The pronounced differences for the *why* placed political and accident stories at opposite extremes.

In previous research, reports remained quite close to neutral during election years from 1980 through 2000, starting off slightly positive and then slipping toward the negative side, at least on NPR (Barnhurst, 2003), but political coverage was generally more negative. The long-term newspaper study did not include political stories (Barnhurst & Mutz, 1997), but the 2001 study of their web sites found politics stories substantially more negative (2.83, see Barnhurst, 2002b).

By 2005 the stories had become somewhat more positive (moving from 2.86 to 2.94 overall), coming close to the neutral point (at 3.0 on the 1–5 scale). Among the newspapers, the *Times* and *Tribune* sites stayed the same, but the *Oregonian* became significantly more positive (moving from 2.98 in 2001 to 3.45 in 2005). Comparing topics, political and crime reports were the most negative in 2001 (at 2.73), but not in 2005: both became more positive, a rarity on the measure. Accidents, which had a neutral tone in 2001, became more negative in 2005, and crime coverage became even more negative, especially compared to political and job coverage.

Although the continuously shrinking length reversed itself in the 2005 sample, the long-term trend toward more emphasis on news analysis continued. The *Oregonian* was the outlier in its positive tone, especially for politics and employment coverage. And, except the *Oregonian*, the three sites were explaining *how* less often. Explaining *why* in the stories concentrated in political and not in accident coverage. Understanding what contributed to these patterns calls for a look at changes in the other components of reporting: the *who*, *what*, *when*, and *where*.

Who

In previous research, the new long journalism had a particular impact on who would appear in the news. The number of individuals named in stories declined, and being identified in the news increasingly required a description, usually of one's group affiliations. More and more groups also appeared independently. The roles that individuals played began to shift as well, with fewer of them appearing as main actors in events, so that, instead, more voices heard in the news were those of officials and outside sources.

The number of named individuals, which had fallen from more than 1 per story in 1894 to below .04 in 1994 (Barnhurst & Mutz, 1997, p. 37), continued to dwindle; it was a negligible element in the 2001 reports (Barnhurst, 2002b). In the 2005 data, named individuals rebounded to levels of the 1990s (see Table 2). Politics continued to differ from other topics, especially employment and accidents. Political stories were most likely to use just the name, but only rarely. Similar to 2001, the most common practice was to name and describe persons in all topics, but the average number of them declined (from 4.98 in 2001). Topics differed across the board, with politics naming and describing the most and accidents fewest persons per story. The least common form is a description without name, which occurred most often in crime stories, followed by accidents, and least often in jobs stories, behind politics. Overall, the rate of including persons

declined from 2001, when on average each two stories included about one more person than in 2005.

Table 2
Who in Topics

Mean number of times (and in what way) articles mentioned persons, their roles in the news, and groups by topic for all three internet newspaper sites.

	Overall	By Topic			
		Politics	Jobs	Crime	Accidents
All Sites	N 480	120	120	120	120
Persons					
Named only	0.06	0.15	0.03	0.06	0.01
Both named and identified	4.43	6.23	3.58	5.05	2.87
Identified only	0.79	0.42	0.28	1.56	0.91
Roles					
Individual actors	2.62	1.48	2.84	4.37	1.80
Politicians	2.11	4.53	0.58	2.13	1.23
Official sources	0.29	0.22	0.55	0.21	0.19
Journalists	0.04	0.08	0.02	0.06	0.01
Groups					
Named	2.68	3.22	2.92	2.32	2.25
Described	1.73	2.68	2.18	1.24	0.80
Total	4.36	5.80	5.10	3.49	3.05

In the roles for those appearing in the news stories overall, individual actors were the most common, followed by politicians. By topic, politicians and officials dominated politics stories and were important in crime stories. Other individuals predominated in employment coverage and shared the stage with officials in accident stories. Although the general pattern held between 2001 and 2005, persons in all roles increased in crime stories, especially individual actors, but decreased in job stories and accident stories. The declines disconnected key players from politics stories (the politicians declined from 5.03 in 2001, a loss of one politician for each two stories) and from accident stories (actors and victims went down from 3.41 in 2001, a loss of three individual actors for each two stories). Instead, the online news stories focused more on persons involved in crime (going from 5.69 in all for 2001, a gain of one person per story, especially individual actors)

Groups declined from 2001, returning to levels of the 1990s. The news stories most often identified groups by name across all topics, and the most groups appeared in politics stories, followed by employment stories. Accident coverage included the fewest groups. These patterns held from 2001. Overall and for most topics in 2005, persons outnumbered groups by about one per story (contrary to results from 2001), except for jobs stories, where the opposite held.

The results for the *who* by topic continue long-term trends away from persons generally, with some interesting reverses within the data,

especially for named individuals. Stories disconnected from persons key to the kind of events (politics and accidents), but increased emphasis on persons in crime. Groups declined in the 2005 data after a spike in 2001, continuing the ups and downs of the last several decades. Even so, they continue the general pattern of the previous century, which saw an upward movement in the number of groups the news stories mention. The topics lined up with politics stories mentioning groups the most, then jobs, crime, and accidents the least (the latter two switched places from the 2001 measures). Overall, the results for the *who* by topic suggest a tentative move back toward persons in the news, at least compared to groups and as named individuals.

Table 3
Who on Sites

Mean number of times (and in what way) articles mentioned persons, their roles in the news, and groups, by internet newspaper site and topic.

Per Site	N†	Overall	By Topic			
			Politics	Jobs	Crime	Accidents
		160	40	40	40	40
New York Times						
Persons	Named	0.11	0.28	0.03	0.10	0.03
	Both	4.53	6.53	2.90	5.70	2.98
	Identified	0.97	0.85	0.43	1.60	1.00
Roles	Actor	2.53	1.35	2.58	5.10	1.10
	Politician	1.91	4.30	0.33	2.05	0.95
	Official	0.49	0.38	0.80	0.40	0.40
	Journalist	0.06	0.13	0.00	0.08	0.03
Groups	Named	2.87	3.93	2.65	2.85	2.05
	Described	1.96	4.03	2.45	0.88	0.48
	Total	4.71	7.70	5.10	3.53	2.53
Chicago Tribune						
Persons	Named	0.06	0.18	0.05	0.00	0.00
	Both	4.03	5.80	3.30	4.50	2.53
	Identified	0.85	0.33	0.30	1.80	0.98
Roles	Actor	2.46	1.30	2.65	3.85	2.03
	Politician	2.15	4.65	0.53	2.20	1.23
	Official	0.25	0.28	0.45	0.18	0.10
	Journalist	0.06	0.10	0.03	0.10	0.00
Groups	Named	2.27	2.60	2.85	1.75	1.88
	Described	1.54	1.85	1.95	1.63	0.75
	Total	3.81	4.45	4.80	3.38	2.63
Portland Oregonian						
Persons	Named	0.02	0.00	0.00	0.08	0.00
	Both	4.73	6.35	4.53	4.95	3.10
	Identified	0.55	0.08	0.10	1.28	0.75
Roles	Actor	2.88	1.80	3.30	4.15	2.28
	Politician	2.29	4.63	0.90	2.13	1.50
	Official	0.13	0.00	0.40	0.05	0.08
	Journalist	0.01	0.00	0.03	0.00	0.00
Groups	Named	2.89	3.13	3.25	2.35	2.83
	Described	1.68	2.15	2.15	1.23	1.18
	Total	4.56	5.25	5.40	3.58	4.00

A closer look at persons within the three newspaper sites found the pattern continued of journalists usually naming and identifying sources (see Table 3). Only the *Times* had an appreciable number of sources stand by name alone (the *Oregonian* did so rarely, and only in crime stories) and also used one unnamed source per story on average (the *Oregonian* rarely did, again most often to cover crime). In the roles journalists assigned to persons in their stories, the three sites differed appreciably only on official sources. The *Times* relied most heavily on officials. Groups appeared frequently in the *Times* coverage politics, the only topic in a site to approach the high average in the 2001 study. Stories on politics and jobs consistently described more groups than did stories on crime and accidents.

In general, the *Times* seems to have hewn most closely to the longer trends found in previous studies, especially in presenting persons and relying on officials. But in this study, the *who* in stories was otherwise similar among the news sites. The topics contrasted more strongly, with politics differing most significantly with other topics, especially employment and accidents.

What & When

In previous studies the events reported (the *what*) and their time frames (the *when*) changed. The events per story declined from the high of three events for every two stories in 1894 to a low of only one out of nine stories referring to two events (Barnhurst & Mutz, 1997, p. 41). While containing fewer current events, they referred to other points in time (from 1.4 in 1894 to 1.7 in 1994; see p. 42). In 2001, after the newspapers moved online, their sites increased slightly how many events the average story included (1.16, Barnhurst, 2002b), to the level of the 1970s. The data for 2005 show another small increase in current events (1.20, one story in five having more than one) but references to past and future tripled and references to change over time doubled, so that the average story went from reporting short of two events in 2001 to almost three in 2005 (see Table 4), a dramatic shift.

For different topics, political stories contained the most references to other time periods in the past and the most predictions of the future. They were the most complex temporally, with the most references to present, past, and future. Jobs stories mentioned change over time most often, suggesting that reporters saw employment coverage as a temporal process. Accident stories, overall, had the fewest references to other time periods, remaining relatively disconnected from past and future but focused on events in the present.

Table 4
What & When

Mean number of events included in articles and mean number of references to time periods.

	Overall	By Topic				
		Politics	Jobs	Crime	Accidents	
All Sites	N	480	120	120	120	120
Events		1.20	1.25	1.14	1.13	1.28
Past events		0.94	1.34	0.88	0.94	0.58
Future events		0.45	0.68	0.59	0.32	0.21
Total		2.59	3.27	2.61	2.39	2.07
Change in time		0.20	0.20	0.49	0.02	0.11
Per Site	N	160	40	40	40	40
New York Times						
Events		1.15	1.25	1.05	1.08	1.23
Past events		1.40	1.90	0.93	1.83	0.95
Future events		0.60	1.03	0.63	0.50	0.25
Total		3.15	4.18	2.61	3.41	2.43
Change in time		0.28	0.40	0.65	0.05	0.03
Chicago Tribune						
Events		1.14	1.23	1.08	1.13	1.15
Past events		0.67	1.18	0.85	0.38	0.28
Future events		0.24	0.30	0.38	0.18	0.13
Total		2.05	2.71	2.31	1.69	1.56
Change in time		0.16	0.05	0.40	0.00	0.18
Portland Oregonian						
Events		1.31	1.28	1.30	1.20	1.45
Past events		0.74	0.95	0.88	0.63	0.53
Future events		0.51	0.73	0.78	0.28	0.25
Total		2.56	2.96	2.96	2.11	2.23
Change in time		0.18	0.15	0.43	0.00	0.13

Differences among the three news sites reveal a divergence, especially compared to the newspaper data from the past century, in which at all three outlets tended to move together as part of a unified journalism. The *Times* generally followed the one-event-per-story rule for covering the present, but its stories also included the most events from other times for almost every topic. The *Tribune* had the fewest references to other times and change, especially the future, not only overall but also for each topic. The *Oregonian* drew the most connections between current events (including a second event in one of every three stories), but its treatment of other time periods was mixed and usually fell between the highs of the *Times* and the lows of the *Tribune*. The *Times* continued to embrace placing current events in relation to other times, while the *Tribune* moved in the opposite direction and the *Oregonian* became more focused on the now.

The increases in the what and when in the 2005 data the changes first appearing in the 2001 study, suggesting that the conditions of

journalism practice continued to respond to conditions that emerged at the first of the present century.

Where

The long-term trend in the content of these newspapers, which persisted as they moved online, was to shift away from the smallest locations toward larger geographic domains. Previous research showed declines in events at street addresses (from 1.4 to 0.8 references per article between 1934 and 1994) and growth in events at distant locations (from 0.1 in 1894 to 0.3 in 1994, see Barnhurst & Mutz, 1997, p. 36). In the 2001 news sites, both these trends continued (Barnhurst, 2002b). In 2005 references to the most local continued to decline and references to the most distant continued to grow (see Table 5).

The decline in street addresses has been continuous since the 1930s, when one half of stories referred to two local places. The rate dropped to fewer than half of the articles in 2001 and to two of five articles in 2005. Foreign locations have grown fairly consistently since the 1890s, from only one story in ten to more than one in four, and then to more than one in three for the 2001 internet editions. In 2005 news articles covered foreign locations about as often as street addresses. Most articles refer to a town or city (although slightly fewer than in 2001) and more than half to the state. Mentions of state, regional (especially), national, and foreign locations all increased.

By topic, reporters covering accidents and crime leaned much more toward the local, tended toward larger domestic areas for jobs stories, and pushed toward international locations in political stories. Even so, they mentioned the town or city most often. Politics stories most often differed significantly from accident stories.

The three newspaper sites present locations to match their character as news organizations, with the *Oregonian* outstripping the other two sites in covering smaller locations and the *Times* doing the same for national and international coverage. The *Tribune* consistently falls between the other two sites. The pattern for the three is most pronounced in the case of politics.

The distance index (developed in Barnhurst & Mutz, 1997) summarizes these results. The *Times* scores highest, followed by the *Tribune* and then by the very local *Oregonian*. Political stories score highest on the index for any topic, jobs the second, and crime and accidents follow. Overall, the distance index dropped dramatically in the 2001 data (after the newspapers had been online for a few years), and, although it increased a goodly amount (from 3.14), the 2005 index is still below any measure during the 20th century, suggesting that forces

impinging on news content took a more local turn around the beginning of the current century.

Table 5
Where

Locations, from the closest and most distant, as the mean number of references in articles. Mean distance as indexed on a scale with low scores for events at street addresses, followed by towns and cities, states, regions, nations, and other nations.

	Overall	By Topic				
		Politics	Jobs	Crime	Accidents	
All Sites	N	400	120	120	120	120
Street address		0.41	0.19	0.18	0.57	0.68
Town or city		0.94	0.70	0.91	0.96	1.10
State		0.58	0.61	0.63	0.53	0.54
Region		0.15	0.04	0.22	0.16	0.18
Nation		0.43	0.52	0.70	0.29	0.14
Other nation		0.40	0.55	0.40	0.29	0.37
Distance		3.41	3.08	3.84	2.90	2.94
Per Site	N	160	40	40	40	40
New York Times						
Street address		0.06	0.08	0.00	0.08	0.08
Town or city		0.44	0.30	0.23	0.63	0.60
State		0.36	0.40	0.23	0.40	0.43
Region		0.14	0.03	0.10	0.15	0.28
Nation		0.64	0.70	1.15	0.45	0.18
Other nation		0.64	0.80	0.68	0.38	0.73
Distance		4.36	4.64	4.86	3.76	4.17
Chicago Tribune						
Street address		0.30	0.03	0.13	0.63	0.43
Town or city		0.94	0.35	1.18	0.95	1.28
State		0.40	0.45	0.30	0.23	0.55
Region		0.15	0.00	0.30	0.13	0.18
Nation		0.40	0.55	0.75	0.20	0.10
Other nation		0.38	0.75	0.18	0.35	0.23
Distance		3.32	4.37	3.56	2.79	2.56
Portland Oregonian						
Street address		0.86	0.48	0.43	1.00	1.55
Town or city		1.44	1.45	1.33	1.30	1.68
State		0.98	0.98	1.30	0.98	0.65
Region		0.16	0.10	0.25	0.20	0.10
Nation		0.26	0.23	0.43	0.23	0.15
Other nation		0.19	0.10	0.35	0.15	0.15
Distance		2.55	2.61	3.12	2.39	2.09

Discussion

News after almost a decade online seems to have split into two types, one that continues the older trends toward long journalism, and another that has taken a different (in cases sharp) turn, with aspects that resemble what journalists produced during earlier stages in the content of news.

The political stories are the most like what news had become over the past century: analytical stories full of explanations that come from officials and groups and refer to many other events from other times and to the largest, most important domains. The results align with previous research on political coverage in the news (Greer & Mensing, 2004; Hoffman, 2006). Political reporters continue to write the longest stories, and despite a small decline in length for 2005, the averages align with the long-term trend. The same applies to the emphasis on news analysis (as against an event-centered focus): politics is the most analytical topic, and although the ratings for analysis declined overall (but still followed a century-long trend), political stories stayed about the same. Explanations of the how and why dropped dramatically, but did so the least in political stories. And the tone of reporting, previously most negative for politics, moved past the neutral point into the positive side, a startling reversal (but more on this change later, in the discussion of differences among newspapers).

The pronounced tendencies in political coverage extended in some aspects to other topics, most often to the coverage of employment. Usually politics was also the most likely to follow older trends for the *who*, *what*, *when*, and *where* in story content. Except for the number of stand-alone individuals (identified by name alone), which increased for all topics to levels last found in the 1990s, political reporting had most of the other markers of long journalism: the most officials and groups as sources, the most references to other time periods, and the largest domains, especially national and international (with the highest distance index).

Accident (and to a lesser degree, crime) stories typify the new, emergent news. Reversing the trend of a century, accident coverage became as short as were all stories half a century ago. The results align with previous research on accident coverage online (Greer & Mensing, 2004; Tremayne, Weiss & Calmon Alves, 2007). Reporters became much less analytical (as opposed to event-centered) in news of accidents, but they did explain *how* accidents happened, but less often *why*. The stories also grew more negative (although not as much as crime stories did), contrary to the general change in tone for 2005. In the five *Ws* of news, accident coverage saw a decline in individual actors and victims, straying away from the main characters in such events (one of the few characteristics accident stories shared with politics stories, where politicians declined as sources). Accident stories also paid less attention to groups, although this measure has moved up and down periodically in its general upward trend. Unlike the long journalism, the news these accident stories typify increased in references to other current happenings, but referred the least to past and present

events as context for the current *what* of news. Finally, the accident type of news is the most local, referring most to street addresses and the town or city and least to the national context. Accident news scored the lowest on the distance index. Other studies have pointed to the local focus of news online (Engebretsen, 2006; Tremayne, Weiss & Calmon Alves, 2007).

Given these opposite kinds of news, the news outlets line up in ways that fit their purview, strength, market position, and history. The *New York Times*, always slow to change, appears to be following the older trend toward long journalism. It runs the longest, most analytical stories, explaining the *why* most often, and its tone is the most negative. It relies on the most official sources (but the fewest politicians) and uses journalists as authorities the most, it refers to other time periods with the greatest frequency, and it covers the largest domains, especially national and international coverage. The *Times* continues with the characteristics of authoritative, modern journalism (Hallin, 1994).

The Portland *Oregonian*, by contrast, runs the shortest, least analytical stories, while explaining how events happen the most, with the most positive tone. It relies the least on official and journalist sources, relying the most on individual actors and politicians, and it names the most groups (without identifying them further). Finally, it includes the highest number of current events in its stories. The *Chicago Tribune* tends to stand between these two except in two aspects. In its treatment of groups, the *Tribune* names the fewest, describes the fewest, and simply includes the fewest overall, a pattern that applies especially to political stories. Second, it reports the fewest current events per story and relates that one event to the fewest past times, future times, and changes over time. Events in the *Tribune* have the lowest number of all events per story, the least temporal context.

An important question remaining is how much the results for the online editions also hold for the print editions. A post-hoc comparison suggests that the two editions are diverging in some ways (see Table 6). The online articles in the 2001 sample (Barnhurst, 2002b) were either identical to the version in the print edition or substantially similar. (But by 2005 the *Oregonian* merged its stand-alone site, which had no wire content in 2001, with its city site, *oregonlive.com*.) A subsample of one-tenth of the 2005 articles in this study stratified by newspaper and by topic and drawn at random, suggest a caveat to the results reported here.

A two-thirds of the stories online and in print were identical or mostly so, with changes only to the headline or dateline, for example. Previous research found a similar pattern emerging (Engebretsen,

2006; Gasher & Gabrielle, 2004). Only one story in six appeared in both editions with greater changes to the text, probably related to space considerations: a story would appear in full online but only as a print brief or small notice (such as an item in a round-up listing of similar events). A difference not seen in the previous study is that a sixth of the stories online did not appear in print. In both types of differences, the editors seem to have drawn stories from other news organizations, such as wire services (for 56.25 percent the differing stories), rather than from their own reporters.

Table 6
On-line vs. Print Editions

Percentage of on-line sample^a stories differing from the corresponding stories in the print edition, first overall and by newspaper site and by topic, then broken out by topic within each newspaper site.

	All	Newspaper sites			Topics			
		N. York Times	Chicago Tribune	P. Oregonian	Polit.	Empl.	Crim.	Accid.
Identical	39.58	25.00	25.00	62.50	50.00	25.00	33.33	33.33
Similar (small changes)	27.08	6.25	50.00	12.50	25.00	16.67	33.33	33.33
Different (large changes)	16.67	37.50	12.50	0.00	8.33	8.33	33.33	16.67
Online only, not in print	16.67	31.25	12.50	6.25	16.67	50.00	0.00	16.67

	Politics			Employment			Crime			Accidents		
	NYT	CTrib	P.Ore.	NYT	CTrib	P.Ore.	NYT	CTrib	P.Ore.	NYT	CTrib	P.Ore.
Identical	75	0	100	25	50	25	0	50 ¹	50	0	0	100
Similar	0	75 ¹	0	0	0	50	25	25 ¹	50	0	100 ¹	0
Different	25 ¹	0	0	0	25	0	75 ¹	25	0	50 ¹	0	0
Web only	0	25 ¹	0	75 ¹	25	25	0	0	0	50 ¹	0	0

^aRepresenting a 10 percent sub-sample, drawn at random from the study sample, stratified by paper and topic.

^{1,1,1} Indicates number of wire stories, each story representing 25 percent of the cell.

The newspapers differ in predictable ways, from the smallest paper reusing print-edition material the most to the largest doing so the least. The *New York Times* site keeps less than one-third of its content the same or similar online; the *Chicago Tribune* retains three-quarters, and the Portland *Oregonian* relies even more (84.25 percent) on the shovelware approach to web content. The greater financial resources of the *Times* would allow the greatest use online of wire stories (most of the differing stories, 93.75 percent), and the fewer resources of the *Oregonian* would account for the complete absence of double editing (redoing a story for each edition). Overall, the shares of stories that come from wire services range from none in the *Oregonian* site, almost half in the *Tribune* site (43.75 percent), to half in the *Times* site. Because wire service charges depend on usage, the dif-

ferences in the sample align with the resources of the newspapers.

The differences among topics reveal more about the conditions of journalism practice. Political stories, the most important in professional news, appear in about the same staff-produced version three-quarters of the time (no staff-produced politics story differed or appear online only). The wires provide half of the accident stories, but a quarter of crime and employment stories. Professional expectations probably push toward keeping as much original reporting as possible in print and online. An editor might find it hard on newsroom relations to reduce a reporter's story to a brief in print, something much easier to justify with wire copy. Only one wire story had identical text in both editions, but three-fourths of all web-only stories came from wire services.

The breakout of topics by newspaper indicates how resources and practice interrelate. The *Times* staff produces little on accidents or jobs, but more on crime and politics. The *Tribune* staff edits wire copy for the web (for all its accident and half its crime and politics stories), a luxury perhaps not available to the *Oregonian*. At opposite ends of the polarity presented here, accident reporting at the *Oregonian* is entirely identical in print and online, and a majority of political reports in the *New York Times* are also identical. Although results from another, separate study of the print editions would likely differ somewhat from those reported in this study, the main observations would likely hold.

Conclusions

Besides the obvious parochial conditions at the three newspapers, what accounts for the divergence in news that the 2005 data reveal? The easiest explanation might seem to be that the rise of internet has redefined or caused the redefinition of news itself. The impact of the technology appears strongest in the smallest newspaper website with weakest market position and institutional stature. Such a conclusion would be wrong on several counts. First, it proposes a raw technological determinism, as if a technology, rather than the collective activities of human communities, could be the driving force in social change. It also discounts the important counterweight of the larger, more prestigious news organizations, especially the *New York Times*, which has continued an unbroken course toward the long journalism and the increased status of journalists in public discussions. The *Times* leads the U.S. news industry.

Another possible explanation could come from the practical perspective of the study design and research method. An important insight from the literature is the divergence of internet from print edi-

tions. Even though the evidence from previous studies is inconsistent and the post-hoc information presented here is inconclusive, there may be some merit to an explanation from the methodology quarter. Of course, the explanation also ignores the tendency in all three newspapers to continue long-journalism practices when it comes to political news. Politics is a core beat for reporting, and informing the citizenry is central to journalists' argument that their occupation is a profession: it has a public mission to serve as the Fourth Estate in U.S. politics. Further research should take up that question of web content versus print versions, analyzing not only the same stories, as studies usually do, but also comparing topical coverage, especially accidents and politics.

The most pessimistic explanation along these lines would see the changes, especially at the weaker *Oregonian*, as a harbinger of death for the newspaper business, at least in its paper incarnation. News online seems to morph into another entertainment option among many, one only potentially more serious than other kinds of product marketing designed to drive clicks and page views. Previous research suggests that the print editions of newspapers are richer in content, in sources, and in imagery (Engebretsen, 2006; Gasher & Gabrielle, 2004), despite the hype about multimedia and the arguments of journalists in favor of the potential of the web. The death of newsprint, or of the kind of reporting newsprint has carried, would be a blow to politics and public life. But in the long history of communication, no medium has ever vanished completely. Some turn into art forms or exclusive activities, but they go on.

All of these explanations assume that the old journalism, which put reporters and editors in the role of professionals (the best-informed insiders), can produce the most informative news. The preeminence of the *Times* and the centrality of politics emphasize this explanation. But making journalists the sense-makers of current affairs barely disguises an underlying occupational ideology, advancing the status (and in some cases the celebrity) of the news-editorial worker. If the shorter, telegraphic news found online is what the public wants and will read (or consume, in market terms), then perhaps there exists an optimistic explanation: that the older news was not, after all, the main fount of public knowledge, something that the new news might instead encourage. Decades of communication research have not discounted the importance of direct speech: political oratory and rallies, conversations at the bar or over dinner, voting, discussions at condo-owners' meetings, and the like. The present study does not cast light on reader attitudes, but further research should examine what citizens make of the changing news they find online.

This study provides additional evidence of change in the content of news concurrent with the widespread popularity of internet solutions to a range of previously analog activities. Rather than being a direct outcome from technology, the developments emerge from collective activities, especially economic and occupational conditions in news industries. The changes in U.S. online content in some ways suggest a return to an older definition of news as brief, local, and just the facts.

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Appendix
Statistical Tests

One way analysis of variance for site by variable and for topic by variable, with post hoc Sheffe tests[†] (significant at least at the .05 level). Significant values indicate that the differences likely do not result from sampling error.

	Site			Topic			
	p	F [‡]	A. NYT B. C.T. C. P.O.	p	F [‡]	a. Politics b. Empl. c. Crime d. Accid.	
Length	.000	321.76	BC*** AC*** AB***	.000	10.03	d*** d** d** a***bc**	
Emphasis	.000	14.99	B**C** A** A**	.000	32.17	cd*** c**d*** a***b** ab***c**	
Explanations							
How	.000	238.32	C*** C*** A***	.366	1.06		
Why	.001	6.87	B** A** A**	.000	16.11	cd*** d*** a*** ab***	
Tone	.000	27.28	C*** C*** AB***	.000	7.58	c** c** ab**	
Who							
Persons							
Named only	.044	3.15	C* A*	.002	4.99	bd* a* a*	
Both	.152	1.89		.000	29.03	bd***c* a***c** a**b***d** ac***	
Described only	.009	4.73	C* A*	.000	29.80	c***d* c***d** abd*** a**b**c***	
Roles							
Individual actors	.419	.87		.000	24.63	b**c*** ac**d* ad***b** b**c***	
Politicians	.444	.81		.000	70.01	bcd*** ac*** ab***d* a***c*	
Official sources	.000	10.17	B**C** A* A**	.000	6.63	b** acd** b** b**	
Journalists	.188	1.68		.198	1.56		
Groups							
Named	.025	3.71		.002	5.01	cd* a* a*	
Described	2.44	2.44		.000	36.73	cd*** cd*** ab*** ab***	
What & When							
Events				.170	1.68		
Past events	.000	18.76	BC*** A*** A***	.000	8.23	b*d*** a*	
Future events	.000	16.28	B*** AC*** B***	.000	18.79	cd*** c**d*** a***b** a***b***	
Change in time	.024	3.75	B* A*	.000	30.71	b***c** acd*** a**b*** b***	
Where							
Street address	.000	27.01	C*** C*** AB***	.000	7.34	d** c*d** b* ab**	
Town or city	.000	37.26	BC*** AC*** AB***	.009	3.89	d* a*	
State	.000	32.44	C*** C*** AB***	.723	.44		
Region	.000	.16		.003	4.65	bd* a*	
Nation	.000	17.48	B**C** A** A***	.000	29.78	b**c*d** a**cd*** a**b*** ab***	
Other nation	.000	8.91	B**C*** A* A***	.227	1.45		
Distance	.000	76.23	BC*** AC*** AB***	.000	15.66	cd*** cd*** ab*** ab***	

[†]For news sites (A, B, C) and for topics (a, b, c, d): *** = p < .001, ** = p < .01, * = p < .05

[‡]For site, the degrees of freedom are (2, 477). [‡]For topic, the degrees of freedom are (3, 476).

Biographical Information

Kevin G. Barnhurst (Ph.D., 1997, University of Amsterdam) is Professor at the University of Illinois at Chicago, where he teaches graduate theory and research methods and well as political communication topics. He is the current chair of the Political Communication Division of the International Communication Association and former editor of *Political Communication Report*. He has published widely on politics and the media and held fellowships including Distinguished Fulbright Chair in Italy (2006), Fellow of the Shorenstein Center on the Press and Public Policy, Kennedy School of Government, Harvard University (2001), and Research Fellow at the Media Studies Center, Columbia University (1991–1992).

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Contact

Kevin G. Barnhurst, Ph.D., Professor of Communication, University of Illinois at Chicago, 1007 W. Harrison St. (MC-132), Chicago, IL 60607-7137 Office (312) 413-3231 Fax 312.413.2125 E-mail kgbcomm@uic.edu Web Research & Teaching <http://www.uic.edu/~kgbcomm> New Long Journalism Project <http://www.uic.edu/~kgbcomm/longnews>

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