

Technology and the Changing Idea of News: 2001 U.S. Newspaper Content at the Maturity of Internet 1.0

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Continuing prior research on print news, a content analysis provides baseline data on Internet news for 2001. By that year, a point when most of the U.S. press had moved online, the “who, what, when, where, why, and how” of stories continued the trends found previously. Stories grew longer and had more explanations of how and why. They emphasized more groups than individuals, and more individuals were officials or outside sources. The changes suggest that news after moving onto Web 1.0 continued its former trajectory, enhancing the professional authority of journalists. But once online, the newspapers began refocusing on local markets and on the idea of connecting events. News stories included many more events and linked them to others in history. And the locations of news stories moved closer to the places where people act as citizens, reversing a century-long trend.

In 1901, U.S. news was understood as the rapid transmission of many stories. Reporters had recently developed the doctrine of the *scoop*, or first report (and the *exclusive*, or unique report). Their definition of news emerged as the telegraph and telephone, along with wire services, became a network for covering the *who, what, when, and where* of journalism. An important story from Washington would be printed as a stack of updates, in reverse chronological order, just as they came over the wire (Barnhurst & Nerone, 2001). The technology was an expression of event-centered reporting.

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By the end of the 20th century, dictionaries and everyday conversations still defined news as a first report of events, but the news stories that U.S. journalists wrote had changed. An important political report from Washington had to analyze and interpret what happened (Barnhurst, 1991). As a result, news stories became generally longer, more analytical, and focused on interpretation, affecting every other aspect of news: *who* shifted to officials and interest groups, *what* shifted to fewer episodes, *when* to past and future contexts, and *where* to larger domains.

The beginning of the 21st century was a pivotal moment when Internet 1.0 was mature and Internet 2.0 had not emerged. Online newspapers were still young and unprofitable, and many publishers were not yet producing content initially for the Web edition, preferring a more economical routine: mounting the text of their print edition online (Barnhurst, 2002). But reporters were using networked resources to gather information and find connections among related events, past as well as present. Editors and publishers had begun to think about competition from the Internet, and scholars considered the worldwide Web capable of enlarging what Herbert Blumer (1969) had called the media arena.

Did news content change when newspapers first moved onto the early Internet? The answer matters because changes in the news historically have accompanied shifts in the power of the press and of journalists (Barnhurst & Nerone, 2001). A century earlier, news work was an industrial occupation, a form of piecework paid for by the line, and news workers (with few exceptions) had low status compared to politicians (Weber, 1921/1958). Each day's newspaper published hundreds of brief items, with little differentiation among them and often without much discernible impact. In the 20th century, journalism became a salaried profession that required a college degree and conferred a status equal to or surpassing that of politicians. The new, long-form journalism of explanation helped advance the role of journalists, who became analysts passing judgment on events. Political scientists argued that journalism had become a political institution (Sparrow, 1999; Cook, 1998; Iyengar & Reeves, 1997), but it remains unclear whether journalists continued expanding their interpretative role after the Internet emerged.

Journalism practices of 2001 have now become the province of journalism history. In the intervening decade, U.S. journalism entered a crisis. Newspapers began to shed thousands of jobs, shuttered their doors, or went online entirely. Magazines like *The Nation* held forth on cures for the death of journalism, and the U.S. Senate held hearings on the future of newspapers, where Web and print publishers exchanged barbs over business models, intellectual property, and the fate of the informed citizenry. What missed opportunities, wrong turns, or bright spots occurred at the moment when newspapers online reached critical mass? The analysis of mainstream content in 2001 presented here is a snapshot of the emergence of online news.

Early Studies of Online News Sites

The 1990s were a decade of high expectations for the Internet and criticism of mainstream news organizations. In an early examination of online journalism, Tom Koch predicted that the then-new electronic technologies would "empower writers and reporters" and "eventually redefine the form of news in specific and of public information in general" (1991, p. xxiii). The result would "be a change in the narrative form currently accepted without thought by the contemporary news writer and editor" (p. 129).

News written to convey the five Ws emphasizes what happened, the boundary event: "Information at this level of the boundary is naïve, without interpretation" (p. 130). The only interpretation it allows comes in quotations from official sources, and journalists risk acting as transcribers of official statements, or worse, making confused statements by officials seem coherent and authoritative. But a wealth of online information sources would allow reporters to change news in two ways. By supplying more background, drawing easily, for example, on the archive of previously published news, reporters could transform their narratives "from the ephemeral or trivial to the contextual story" (p. 134). By enlarging the temporal and geographic purview, reporters could expand the scale of news: "The death of an overweight man during surgery becomes, in this manner, a part of the mosaic of anesthetic misapplication and an element in the debate over medical insurance, tort reform, or physician review" (p. 143).

A 1995 survey (Ross, 1998) found that only 17% of newspapers had an online edition (although 52% had plans to begin publishing electronically). But reporters were already beginning to use online information (47% at least weekly and 30% less frequently). The respondents used the Internet for a full range of reporting activities: research and reference (66%), downloading data (57%), e-mailing sources (57%), reading publications (45%), finding experts (41%), consulting press releases (26%), and gathering images (21%).

A few years later, when estimates of the number of Internet users rose to nearly 10 million worldwide, Jon Katz asked "whether papers will finally accept reality and radically change, or whether they prefer to die" (1997, p. 44). Although he applauded the usefulness of newsprint, the sense of place found in local coverage, and the factual reliability of professional reporting, he called for a "journalism radically rearranged to become . . . better written, more sophisticated" (p. 68). Print journalism should provide "the analysis and context of the stories we all heard about on TV the night before" (p. 68): "For history, significance and context, you want a newspaper with a squadron of experienced Washington reporters" (p. 69).

Anecdotal evidence from the period suggested that working online was changing news stories. Cornelia Grumman of the *Chicago Tribune*, "a new breed of journalist" (Harper, 1998, p. 73) producing the Internet edition, found writing stories for online publication frustrating: "She started on the newspaper's print side, where she covered suburban police departments. 'My first instinct was to do quick hits,' she recalls. 'They went nowhere. They were up for a day and, boom, they're gone'" (p. 77). She began writing complex stories, such as her analysis of a murder and police investigation, "Who Killed Stacey Fobel?" She compiled "a chronology of events, a list of the people involved in the crime and investigation, and a variety of background stories" (pp. 77-78), and her work stayed longer on the site and got more readers involved.

In 1998, digital journalism was still in its infancy and experiencing growing pains, including the fear that the electronic edition might replace print. The Internet loomed large as a threat but also built expectations for new ways of reporting and writing. Few publishers in 1998 allowed the Internet to scoop their print editions, and few journalists were "doing much original reporting on their Web sites," let alone developing "new storytelling techniques" (Ross, 1998, p. 156).

By 2000, 53% of print newspapers in North America had an electronic edition (Norris, 2001). U.S. surveys from that year indicate that one in three Americans were going online for news at least weekly (up from one in five in 1998). U.S. users were spending more time online but visiting a narrower range of sites. Of thousands of Web sites with information on a topic, only a handful accounted for the bulk of traffic. For news, three old-media companies—NBC (through CNBC), CNN, and *The New York Times*—accounted for three-quarters of online traffic.

A comparison of content from the two versions of six small Colorado newspapers found that their online editions included fewer than half the stories from the print editions (Singer, 2001). Publishers withheld information to make the print editions more valuable to subscribers, and some used the Web to advertise the added content in print. Newspaper staffers produced most of the content initially for print, and the papers then ran identical text online (at most changing a headline or restoring paragraphs cut from the print version). Reports that appeared online only were almost always from wire services, and Web editions had more sports and fewer business stories. Stories less often had images online (18%) than in print (48%).

Electronic editions from larger U.S. markets of the period had not reinvented the print product (Barnhurst, 2002). Web versions reproduced the substance and feel of their print editions for readers. Reading online required multiple screen jumps and scrolls, but added few features such as hyperlinks or interactive resources. The text online appeared with fewer illustrations, just as in the Colorado study, but unlike smaller newspapers, those from larger markets shoveled almost all their content online. The print publishers used a Web presence as a placeholder to guard their local markets. Although the Internet had become a global medium, newspapers online tended to focus on local markets (Chyi & Sylvie, 2001). Their market strategy raised barriers to alternative media entering the news arena.

Newspaper publishers had moved quickly to establish an online presence, but were slow to exploit new technology. Reporters did adopt electronic techniques for gathering information and interacting with sources, but any shifts in story content had not been measured.

Historical studies have shown that the definition of news is always evolving. Newspapers began moving away from transcribing official events after the mid-19th century (Schudson, 1982), and they moved away from descriptive campaign coverage after the mid-20th century (Patterson, 1993). On television, the shrinking sound bite pointed to the growth of analysis within news content (Hallin, 1992; Adatto, 1993). The vocabulary of news became more focused on change and on experts and data, while shifting away from human relationships (Danielson & Lasorsa, 1998). By century's end, news media around the world no longer transmitted information without adding interpretation (Freeman, 2000). Journalists had become direct participants "no longer constrained by a need to place newsmakers' words and actions at the center of the story" (Patterson, 2000, p. 14). Journalists also noted the change. Bill Kovach and Tom Rosenstiel observed that journalists spent "more time looking for something to add to the existing news, usually interpretation" (2001, p. 77).

A large project had tracked the redefinition of news over the course of the 20th century. U.S. newspapers shifted emphasis to social problems and interpretations; stories grew longer, focused away

from specific locations to broader regions, emphasized more history, and cited more groups, officials, and outside sources, while naming fewer ordinary people (Barnhurst & Mutz, 1997). Newspaper format shifted away from pages filled with many small items and shifted toward spatial arrays that journalists designed to explain events (Barnhurst & Nerone, 1991). As politicians' speech diminished on television, journalists tended to hold their ground and offered more judgments about politics (Steele & Barnhurst, 1996). Newscasts adopted more dramatic forms, playing journalists' images larger and more often on screen (Barnhurst & Steele, 1997). Even on National Public Radio (NPR), political reports on daily news programs grew longer by 2000, while becoming more interpretative and less neutral in tone (Barnhurst, 2003). Journalists acted as expert sources and they shifted from recounting to evaluating events.

By the end of the 20th century, the trends across media outlets were strong: toward more analytical and explanatory news stories, with more reliance on official and expert sources, more references to past and future events, and more attention to wider geographical areas. Journalists moved closer to the center of political life, acting as intermediaries who interpreted events. Observers at the turn of the new century saw the Internet as an agent for more democratic distribution of information. But was it so? This study examines newspaper content online in 2001, as Internet editions became the rule, to discover whether the trends of the previous century continued in the new medium.

A Study on Online Newspapers

Did changes occur in the five Ws of news writing and reporting once newspapers went online? To answer that question, this study replicates earlier research (Barnhurst & Mutz, 1997), which analyzed content for a century in three newspapers selected to represent a range of larger markets and to span geographical regions: *The New York Times*, *Chicago Tribune*, and *Portland Oregonian*. The three newspapers operated Web sites representing the spectrum of online newspapers in 2001. All three provided access to content from their print editions in different ways (Barnhurst, 2002). *The Times* reproduced the authoritative quality of its print edition, enhanced with a range of multimedia and interactive supplements. The *Chicago Tribune* operated a comprehensive city-based Web portal that integrated print edition content with interactive response mechanisms and links to archives and current listings, such as sports scores and film reviews. The *Oregonian* was part of a larger Web portal, OregonLive, which had a range of content typical among city portals, but the newspaper site was separate and neither integral to the portal (as was the *Tribune*) nor capable of interactive technology (as were both other sites). No selection of a few sites can represent the entire industry, but the three provide a snapshot of several early approaches for generating an online site from established print newspapers.

The study analyzed the same topics as the previous research—employment, crimes, and accidents—but added a fourth, politics, and adopted categories and definitions from prior studies. A non-probability sample was necessary because archives are not commensurable to each day's live news site and because previous research found that probability sampling introduced errors in coding Internet newspapers (Singer, 2001). A purposive sample of stories was drawn during three consecutive weeks in late July 2001, a period away from the distortions of major events, holidays, or elections, just before the August legislative recesses and vacations.

For each topic, an exhaustive search began from the home page, moved through the site following the order of the navigation bar, and used the site search engine to find additional stories. The selection adhered to the protocol established in the previous study (Barnhurst & Mutz, 1997), gathering all stories for each topic, classifying stories inclusively, and continuing daily until reaching a total of 40 stories per topic from each newspaper site. The strategy produced 160 stories per newspaper, and 480 stories in all including wire stories.

For each story, coders noted the site, date, and topic of the story, whether it was staff or wire copy, its location on a home or secondary page, and the presence of links and images. Coders counted the number of individuals and groups and the roles they played in the stories. They indicated mentions of current events, past and future periods, and changes over time. Locations included street address, city or town, state, region, U.S. national, and foreign or international. Coders also counted the number of times stories explained how or why events occurred.

Besides descriptors, the coders made three subjective assessments, rating story length (on a scale from 1 for very brief to 5 for very long) and emphasis (on a scale from 1 for the most event-centered reporting to 10 for the most general news analysis), as in the previous study (Barnhurst & Mutz, 1997). They also rated the tone (on a scale from 1 for negative to 5 for positive, with 3 for mixed and ambiguous as well as neutral) of the story, a measure not included in the previous study but common in political communication research (e.g., Patterson, 1993).

After the initial coder processed a small sample of stories, an identically trained coder went through the same procedure. Given the complexity of the coding scheme, the reliability was quite high (averaging .89) and ranged in predictable ways (from .98 to .76), with higher coefficients for simple descriptive observations and with marginally adequate coefficients for subjective ratings.

The results stood up under inspection. The major findings proved consistent across news topics and across newspaper sites, usually following trends in previous research. Testing also showed that sampling error could not account for differences (analysis of variance, *F*, with post hoc Scheffe tests). To understand results contrary to previous trends, e-mail exchanges and interviews with journalists, including staff members from the three newspapers, provided insight into their experiences with online editions.

The Trends Continue

A post-hoc comparison of the study articles in print editions showed only minor differences (in headlines, datelines, and the like) in the texts themselves. The greatest contrast between print and Internet editions was the flow of wire-service content online. Different versions of the same event appeared on the same day's site, generated by the newspaper staff, the Associated Press, Reuters, and so forth, as well as near-duplicate postings, especially in the case of *The New York Times*. The versions provided variation without difference, with the same events rendered in similar (or identical) ways. To compare the newspapers' 2001 online content to the print content of the earlier study, this analysis included the staff-produced stories and excluded any duplicates. The current study is a conservative measure, coming after one-third the interval of the prior study, which sampled at 20-year intervals until

1994. Any changes in the shorter time until 2001 would likely have been small by comparison. And, in general, the stories did continue earlier trends for length, explanation, and identifying groups and individuals.

Length, Emphasis & Tone

The first question is whether the news had continued growing longer. Over the previous century, stories grew on a scale from 1 to 5, 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 (Table 1). The increase matched an earlier jump in the 1970s and continued the trend that had leveled off between 1974 and 1994. (The previous study included some wire stories, which tend to be shorter and less analytical, with fewer explanations of how and why events occur.)

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).

	N	Length	Emphasis	Explanations		Tone
				How	Why	
Overall	313	3.55	4.03	5.53	3.42	2.83
Site		***	**	*		*
A. <i>New York Times</i>	72	4.17 ^{B, C}	4.19	4.83	3.64	2.68
B. <i>Chicago Tribune</i>	84	3.54	4.37 ^C	6.16 ^A	3.45	2.69
C. <i>Portland Oregonian</i>	157	3.27	3.78	5.50	3.30	2.98
Topic			***		**	
A. Politics	89	3.82	4.47 ^{C, D}	5.61	3.81 ^C	2.73
B. Employment	77	3.62	4.38 ^C	5.60	3.73 ^C	2.90
C. Crime	77	3.25	3.63	5.65	2.55	2.73
D. Accidents	70	3.46	3.70	5.21	3.54	3.01

†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, B, C, D post hoc Scheffe tests with significance level of at least .05

The three newspapers lined up predictably, with *The Times* running the longest and the *Oregonian* the shortest ($F = 11.09$; for all tests reported here, the degrees of freedom are 2, 312), a pattern that held for most years in the previous study. Until the 1970s, accident stories had consistently run the shortest, often well below crime stories, which came next in length every year. Then in the 1990s, accident stories grew longer, and crime stories dropped slightly below them, a direction that continued in 2001. Employment stories always ran longer in previous years, just as they did in 2001. The longest

stories dealt with politics, a topic not included in the previous study. The spread between the longest and shortest topics is sensible but very small ($F = 2.62$, $p = .051$).

A more complicated question is whether news grew more analytical, as it had in the previous century. Measured on a 10-point scale, the emphasis had started below 2 in 1894, peaking at 3 in 1974 before dropping back somewhat (Barnhurst & Mutz, 1997). By 2001, the tendency had rebounded, reaching 4 on the scale (see Table 1). Even so, the reports remained lower than in other media, such as NPR news (Barnhurst, 2003). The four topics spread out predictably ($F = 6.96$), with stories about politics and employment including markedly more analysis than those about crime and accidents. The news sites differed as well ($F = 4.84$). Results for the *Chicago Tribune* site differed more from the *Oregonian* than from *The Times*. The articles came from news columns, not opinion or editorial pages, and the only article labeled News Analysis appeared in *The Times*.

The growth in length correlates logically with the expanding analysis, which requires more words (Pearson correlation coefficient between length and emphasis is .64, $p < .001$, for the 313 cases). To give a picture of the range from shortest to longest and from most event-centered to most analysis-centered, consider a political report from *The Times* alongside a crime report from the *Oregonian*. *The Times* article, "Cities and Their Suburbs Are Seen Growing as Units" (July 10, 2001, national page), describes a report the United States Conference of Mayors released. Rated high on the scale of emphasis (an 8), it explains the role of cities in creating jobs during the 1990s, reviews the urban renaissance beginning in the 1980s, and cites statistics on the gross metropolitan product as a growing share of national wealth and industrial output. It indicates that the mayors are about to mount a campaign "to pressure state and federal governments to invest more resources into metropolitan areas." Geographically, the story includes six major cities, as well as five minor ones. It compares the economies of several large U.S. cities to those of Taiwan, Australia, and South Korea, and it reports the results from trade offices that U.S. cities have established in London and in China and Germany. The story draws on research from an economic forecasting company and quotes two outside sources, an urban analyst with the Fannie Mae Foundation and a Brookings Institution center director. A photo of the Conference of Mayors president accompanied the story, along with links to census maps, charts, and interactive features and to a discussion forum. All this took space, and the story rated among the longest in the sample (a 5).

At the other extreme, an *Oregonian* story, "Sex Offender Alert" (July 24, 2001, local page), lists the name, age, physical description, address, and criminal record of a man convicted of sodomy several times, and it reports that he "is in compliance with the terms of his supervision," then identifies his probation officer and provides contact information. The story received the lowest score for emphasis and the shortest for length (a "1" for both), running a single paragraph of text without images or links. Crime reports were the briefest and least analytical on the whole, but similar coverage ran for some political stories, such as the election list in an *Oregonian* report, "Candidates File in Drove for Local Agencies" (July 18, 2001, local page).

Journalists provided news analysis through the how and why of their stories (see Table 1). To explain how events occur, a story describes the relationship among them and with the context, drawing out the implications or recommending responses. For example, *The Times* report on cities explains how

the mayors' call for more federal investment relates to the context of declining schools, along with urban congestion and suburban sprawl that accompanied economic growth. The differences in the frequency of explaining were not small ($F = 3.65$), and the biggest difference among the news sites was between the *Tribune* and *The Times*.

To explain why events occur, the journalists described the causes, problems, and collective social issues or themes behind the news. *The Times* report on cities, for example, explains why the mayors have issued their appeal by arguing that metropolitan areas are not usually under a single or unified government and "do not have strong advocates" elsewhere in the U.S. system of government. The topics differed in the frequency of reporting why events occurred ($F = 4.21$). Crime was especially low in explanations of why, differing markedly from politics and employment stories.

On the scale for tone, the content in 2001 rated below the neutral point (of 3.0 on the 5-point scale; see Table 1), more negative than NPR coverage for most years (Barnhurst, 2003). The news sites also varied ($F = 3.59$), with the *Oregonian* slightly in the negative zone and *The Times* even more negative. Comparing topics, political reports were more negative, just as in the case of NPR news. In print they rated the same as crime. Employment reports were not as negative, and accident reports were, surprisingly, the only topic to be neutral (or a hair more positive than neutral), although the differences were slight.

As reporting moved toward longer stories with more analysis and explanation, what changes had occurred in the other components of reporting: who, what, when, and where?

Who

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 (Table 2). But referring to individuals by description, not by name, occurred in three out of four stories. The topics also differed ($F = 8.09$), with politics markedly unlike crime and accident stories, and employment differing from crime stories. In other words, crime stories were most likely to describe actors (perpetrators) or officials without naming them, and politics stories the least likely.

Table 2

Who

Mean number of times articles mentioned people and groups, and their roles in the news.

	Individuals			Groups	Roles		
	Named only	Described only	Both		Actors or victims	Officials	Outside sources
Overall	0.01	0.75	4.98	8.11	2.79	2.46	0.40
Site			***				**
A. <i>New York Times</i>	0.03	0.64	6.25 ^C	8.64	2.97	3.24	0.65 ^C
B. <i>Chicago Tribune</i>	0.01	0.82	5.42	8.33	3.01	2.62	0.45
C. <i>Portland Oregonian</i>	0.00	0.76	4.17	7.75	2.58	2.03	0.25
Topic		***	**	***	***	***	**
A. Politics	0.02	0.38	6.33 ^{B, C}	9.31 ^{C, D}	1.46	5.03 ^{B, C, D}	0.24
B. Employment	0.01	0.52	4.34	9.34 ^C	2.95 ^A	1.13	0.68 ^A
C. Crime	0.00	1.16 ^{A, B}	4.49	6.39	3.58 ^A	1.77	0.34
D. Accidents	0.00	1.01 ^A	4.53	7.11	3.41 ^A	1.43	0.36

One-way analysis of variance: *** = $p < .001$, ** = $p < .01$, * = $p < .05$

A, B, C, D post hoc Scheffe tests with significance level of at least .05

A standard form of identification emerged; a typical report included five persons presented by name and description. The news sites differed ($F = 7.18$), with *The Times* the most likely and the *Oregonian* the least likely to follow the standard. Topics also differed ($F = 4.58$), with stories on politics higher than stories on crime or employment. That is, in the most analytical news site and for the topics most amenable to analysis, journalists often used the name-plus-description formula.

Although individuals continued to appear in the news, groups came to outnumber them, growing from three per story in 1894 and peaking at almost six in 1974 (Barnhurst & Mutz, 1997). In 2001, the number was even larger, so that on average a report mentioned more than 8 groups. The differences emerged among topics ($F = 7.84$), with politics stories again the most likely to mention groups, especially compared to crime and accident stories. Group mentions in reports on employment were also higher than in crime reports.

An article by *The Times* on the guest worker program, "Calls for Change in Ancient Job of Shepherding" (July 11, 2001, national page), turned ordinary individuals into a writer's trope. The article begins with several paragraphs about a shepherd in the Mojave Desert, and when the anecdote closes, the writer states, "The man, who would not let his name be used for fear of angering his employer, is typical of shepherds in the United States, about 800 of whom toil in California." The article then describes the geographical origins of the workers, the lack of change in shepherding, the work as a share of the labor pool, the regulation of wages, proposed legislation in California and its opposition by the ranching lobby, the industry's balance sheet, and the activities of a labor advocacy group and a legal aid group on behalf of the legislation. In other words, the opening vignette about an individual is window dressing for the

reporter's real work, to cover the activities of organized groups. Only at the end of the long article (it rated a 4 out of 5 for length) does the writer again introduce individuals who are actors, not official or expert sources. After a paragraph describes shepherds in Fresno and Kern counties, California, the article returns to the man from the opening anecdote. By contrast, the report included 10 groups and 5 other individuals, all of them politicians or experts. The story contained more than the average number of explanations (of how and why) and was rated very analytical (receiving a 7 on the 10-point emphasis scale).

Where

Over the long term, news reports encompassed larger geographic domains. The closest location—a street address—declined between 1934 and 1994 (from 1.4 to 0.8 references per article), and the most distant—foreign nations—almost tripled (from 0.1 in 1894 to 0.3 in 1994; Barnhurst & Mutz, 1997). In the 2001 news sites, both trends continued (Table 3). On average, fewer than half the articles referred to street addresses, and more than a third referred to other countries. What was once a large difference—between how often reporters included the two geographic domains in stories—had converged by 2001.

Table 3
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, and nations.

	Locations						Distance
	Street Address	Town or city	State	Region	Nation	Other nation	
Overall	0.44	0.98	0.40	0.03	0.36	0.37	3.14
Site	**	**		*	***	*	***
A. <i>New York Times</i>	0.15	0.54	0.36	0.07	0.58 ^C	0.68 ^{B, C}	4.07 ^{B, C}
B. <i>Chicago Tribune</i>	0.21	0.95	0.35	0.02	0.45 ^C	0.24	3.40 ^C
C. <i>Portland Oregonian</i>	0.68 ^{A, B}	1.20 ^A	0.45	0.01	0.22	0.30	2.58
Topic	*	*			***	**	***
A. Politics	0.34	0.78	0.31	0.03	0.37	0.43 ^{C, D}	3.45 ^{C, D}
B. Employment	0.16	0.84	0.42	0.03	0.57 ^{C, D}	0.69 ^{C, D}	3.81 ^{C, D}
C. Crime	0.79 ^B	1.40 ^A	0.43	0.01	0.23	0.22	2.62
D. Accidents	0.47	0.94	0.46	0.04	0.27	0.11	2.59

One-way analysis of variance. *** = $p < .001$, ** = $p < .01$, * = $p < .05$

A, B, C, D post hoc Scheffe tests with significance level of at least .05

At the nearest and farthest extremes, the news sites were different ($F = 5.40$ for street address, 5.99 for city, 2.92 for region, 17.98 for nation, and 3.98 for foreign), with strong local coverage in the *Oregonian*, and national and international coverage in *The Times*. The geographic extremes also were

where differences turned up among topics ($F = 3.10$ for street address, 3.46 for city, 8.00 for nation, and 4.20 for foreign). Crime stories not surprisingly referred the most to street addresses (especially compared to employment) and to towns and cities (as compared to politics). Employment was the topic with the most references to national or international venues, and politics also had a higher average number of references to other countries.

Although readers experience employment working at street addresses, most job-related stories attended to distant jobs. One of the infrequent articles on organized labor, which appeared in *The Times* ("The A.F.L.-C.I.O. Organizes in Cambodia," July 12, 2001, business page), came from Phnom Penh. It uses an opening vignette (the so-called anecdotal lead) to introduce "perhaps the most contentious issue on the international trade agenda today: establishing a floor under labor conditions in developing countries." It mentions labor organizing in Texas and policy debates in Washington (and the World Trade Organization) and refers to China, Vietnam, Taiwan, Hong Kong, Singapore, and Mexico, as well as the headquarters of Nike, the Gap, Levi Strauss, and Sears Roebuck. The highly analytical story (an 8 for emphasis) was also long (a 5 for length), requiring readers to load another page to read the second half, and it focused on groups (14), on explaining how and why (5 times each), and on other time periods (5 references each to past and future).

Despite the trends continuing within location categories, the index of overall distance in the reports saw a reversal. The previous study found that the news moved from just below 1 in 1894 to above 6 in 1994 (Barnhurst & Mutz, 1997). Using the same index, the coverage in the news sites for 2001 scored lower (Table 3).

The news sites differed predictably on the distance index ($F = 32.15$), with *The Times* outdistancing the other two and the *Tribune* taking in a broader geographical purview than the *Oregonian*. The topics also differed ($F = 14.60$), with crime and accidents at the local extreme and politics and employment at the other. In part, the lower distance score results from the extreme local focus of the *Oregonian* sample. In the previous study, the *Oregonian* print editions included national and international coverage from the wire services (which appeared off the main 2001 site). Expanding the study to include political news, in which national coverage dominates, also made the *Oregonian* sample more local in contrast to *The Times* or *Tribune*, which used their own staffs to cover national politics. But the adding of politics stories to the study and the absence of wire stories from one paper's site may not fully explain the turnabout in the index.

What & When

Over the previous century, a substantial drop occurred in the number of different events each story included, with the biggest decline occurring from the high in 1894 (1.7 for *The Times*) to a fairly consistent low (of about 1.1), and although stories contained fewer current events, they referred to an increasing number of other points in time, past and future as well as changes over time (from about 1.1 in 1894 to about 1.7 in 1994; Barnhurst & Mutz, 1997).

By 2001, the average number of events included in a story had increased slightly (Table 4). The original study expected analytical news to draw more connections among events (Barnhurst, 1991), but roundups of related events after the 1890s rarely occurred within one report. A qualitative examination of reports in the 2001 sample found a surge of stories containing more than one distinct but topically related current event. Differences among the three news sites on the measure were small.

Table 4

What & When

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

	What	When		Change over time	All points in time
	Events	Past	Future		
Overall	1.16	.38	.15	.11	1.79
Site		**	**		***
A. <i>New York Times</i>	1.11	.31 ^C	.07	.08	1.56 ^C
B. <i>Chicago Tribune</i>	1.19	.29 ^C	.14 ^C	.12	1.75 ^C
C. <i>Portland Oregonian</i>	1.18	.53	.23	.12	2.06
Topic	**	**	***		*
A. Politics	1.17	.46 ^B	.20 ^C	.07 ^D	1.90 ^B
B. Employment	1.02 ^D	.21 ^D	.23 ^C	.16 ^D	1.63
C. Crime	1.19	.39	.05	.12	1.75
D. Accidents	1.26	.44	.10	.08	1.88

One-way analysis of variance: *** = $p < .001$, ** = $p < .01$, * = $p < .05$

B, C, D post hoc Scheffe tests with significance level of at least .05

For different topics, the number of events per story varied ($F = 4.27$), with accident stories including the most references to related events, and employment stories the fewest. Reporters at the newspapers tended to draw connections among several current accidents (one in four stories did so), but saw employment stories as essentially isolated events.

Besides describing one current event, stories typically referred to another time period: one out of three stories to the past, one in six to the future, and one in 10 to change. Comparing the sites, the analysis found differences in references to the past and to the future ($F = 6.83$ and 7.29 , respectively), and in both cases the *Oregonian* differed most from *The Times*. The *Oregonian* listed many events in stories, such as past crimes in the police blotter and future activities in the events calendar. As a result, the outlier *Oregonian* accounts for some of the measurable difference ($F = 9.292$) among the sites for the total references to all points in time.

By topic, differences turned up in references to the past and future ($F = 3.96$ and 6.08). Journalists were least likely to predict future events in crime stories. The topics with the most future

events were employment and politics. A jobs-related story, "Banks Give Polaroid Time to Renegotiate Millions in Loans" (*New York Times*, July 12, 2001, business page), was full of predictions about the company's plans and "strategic alternatives." It included possible reactions of bondholders and crystal ball gazing by analysts, along with the expectation of 3,000 job cuts (35% of the Polaroid workforce). Likewise, a political story, "Bush Drug Plan Calls for Using Discount Cards" (July 11, 2001, home page), previewed a future policy announcement along with the president's hopes and intentions and the reactions expected in Congress. Although the topics varied somewhat in discussing changes over time, none of the differences were important.

Although the news on the whole continued to follow the one-event-per-story rule, the uptick in the 2001 data was the first in several decades. The references to other time periods and to changes over time also increased slightly that year, both occurring after the newspapers moved online.

Reversals & Internet Ideas

The headline results from the study are the shifts in measures for what and when in news content. Two trends—the index of distance and the average number of events included in a news story—reversed themselves after as long as a century of declines, and a third—references to different time periods and to changes over time—accelerated beyond the expected trend. Even after discounting the sampling differences between results from this replication and the previous study, these shifts may matter. Mainstream journalism in the United States appears to have been changing in some ways as the press was settling into online publishing.

After many decades of business as usual, the contents by 2001 were covering more events in stories, including roundups of related occurrences, especially for accidents and especially at the *Oregonian*, which drew connections to more past and future events. Although specific locations continued former trends, the changed direction in the locations index appears to confirm research from the period (Singer, 2001), which found that some Internet newspaper sites had an unusually local focus. The uptick in events, growth of roundups, and greater linkage to other time periods are a surprise. And the about-face in the location index raises questions about what caused the turnabout.

In other measures, the news the three organizations produced in 2001 continued to move toward the new long journalism of explanation. Stories grew even longer, more than compensating for the lull after the 1970s. Their emphasis also grew even more analytical, although not reaching the levels of other news outlets such as NPR. And they focused even less on individuals as actors in events, and even more on groups, experts, and officials. Despite the changes in where (distance) and what (events), the news content stuck with older patterns for the other Ws (who, when, and why) and for length.

Although new technology was interactive, news workers, organizations, and the industry still presented content designed for an audience of receivers. The longer, more analytical stories presented the journalist as a professional with access to hard-to-reach locations and to authoritative information, whose principal responsibility was to provide expert explanation. The audience depended on news professionals for access to and knowledgeable interpretations of events. The citizen remained a passive recipient,

requiring the intercession of groups and the intervention of experts with the power to judge what occurred. But using Web 1.0, audiences already had alternative ways to get news and participate by sharing stories across networks.

Journalists at the time assigned technology an autonomous power (Technology, 2000). In the mid-20th century, the means of transmission supposedly gave television reporters an edge, allowing them to scoop newspapers routinely; print journalists had to start explaining news instead of merely reporting events, as a way to compete in the news arena (see Barnhurst & Mutz, 1997). But the Internet, as a means of transmission, did not return that competitive edge to newspapers. When allowing the Web edition to scoop the print edition would lose money—letting a free product compete with a profitable one—publishers continued to invest as little in Web editions as necessary to prevent rival sites from competing directly. A contemporary study showed very little of the technological potential of the Internet incorporated into news presentation online, even among relatively prosperous newspapers (Barnhurst, 2002). News sites added few links or interactive features. Technology by itself did not change the content of news stories.

But in sociology, what groups believe to be true becomes true in its consequences. Interviews with journalists at the time suggest that the changes in news content may have responded to practitioners' idea of a powerful technology. Increases in events included in the average story and in references to other time periods resemble the concept of the link (not original to the Web). As the Internet came into popular use, reporters could link events together and also gained access to networked information (Ross, 1998). The content of their stories began including more events and more references linking past, present, and future. Reporters did not necessarily change their practices for the Internet editions (M. McLellan, then special projects editor, Portland *Oregonian*, interviewed October 3, 2001), but interviews at the time suggest that their understanding of the network and its popularity was an element in the background as they produced print stories that would also post online (M. Marriott, then technology reporter, *New York Times*, interviewed October 25, 2001; L. Stone, former editor-in-chief, Women.com, interviewed November 1, 2001).

Journalists also took seriously the idea of the Internet as a power in the market. Interviews suggested that another idea that journalists saw as a factor in the shift toward local coverage was fear of competition. In the mid-1990s, newspaper owners, publishers, and editors expressed alarm when city sites began to appear online (A. J. Glass, then senior correspondent, Cox Newspapers, interviewed December 3, 2001), especially when a software giant announced Microsoft Sidewalk, a system of localized Web pages on community activities, government services, and retail businesses, including event listings, sports results, and advertisements. The profitability of local newspapers depended on their position in the market for local information, such as classified advertising.

The return to coverage closer to home may have served readers better, reversing the long movement of U.S. news away from events affecting the immediate lives of citizens. The drawing of linkages to a story's background and to related current events may also have served readers by providing more of the context that made occurrences meaningful. As one analyst wrote, "Democratization is not the driving force behind the move of the news media into the digital world, but in the longer term it might well be the consequence" (Norris, 2001, p. 185).

The content in 2001 did not anticipate that within a decade journalists would face a crisis in their role as expert explainers. The news media had already become a political institution, and in the previous century news workers and organizations had grown in authority. But the Internet—capable of offering news in a richer environment, with video, audio, chat, and feedback, as well as a generous store of images and related texts—had interactive and dialogic qualities (Sparrow, 1999), tools for citizens to circumvent the institutional power of news media. The newspapers, in the maturity of Web 1.0, moved in contradictory ways. They provided links, at least textually, among events and they shifted their coverage overall toward closer locations. But they also resisted investing to make news interactive, while holding back competitive pressures. And the content they published continued to assert journalists' authoritative position as an intermediary between citizens and government. In hindsight, the turn-of-the-new-century resistance to technology and to audience autonomy likely contributed to the present crisis in American news.



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