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Abstract

The 2003 Iraq War was the first military conflict in which online media played a significant role. Traditional news organizations from around the world provided extensive coverage of the conflict on their websites, reaching global audiences and adding new dimensions to traditional war reporting. This study explores how the Internet disseminated news about the war by comparing 26 international newspaper sites (N = 791) and their use of Web-specific features such as hyperlinks, animations, multimedia content, and interactive elements. By proposing a three-stage model of online journalism and applying it to the online war coverage, the analysis suggests that online journalism has not yet reached the state of convergence. The differences in online news coverage between the United States and international websites and their implications are also discussed.

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Introduction

Online news is a relatively new phenomenon in the history of journalism. A decade ago, newspapers and news providers were just beginning to explore the possibilities of near-instant delivery of content to readers that the World Wide Web can supply. Currently, thousands of newspapers, television and radio stations, magazines, and other publications have a presence online, and millions of Web users read news on the Internet every day (Salwen, Garrison, & Driscoll, 2005).

While the Internet has become a major source of information, few studies have examined the use of the Internet in the coverage of the 2003 Iraq War. This was arguably the first war during which the World Wide Web became an important news source, not only in the United States, but also around the world, allowing about half a billion people to read different news about the war (Rainie, Fox, & Fallows, 2003). The goal of the present study is to examine how U.S. and international online

newspapers used the Web to cover the 2003 Iraq War. Based on a three-stage online news model, the study evaluates the use of Web-specific features on the homepages of 26 online newspapers from 17 countries.

We chose to examine how the 2003 Iraq War was covered in major U.S. and international online newspapers, because the war was without a doubt a major international news event. Given its international scope and impact, news organizations around the world were likely to invest resources in the coverage of this event. Additionally, in contrast to breaking news events, the 2003 Iraq War presented the news media with ample lead time to plan online coverage, including special and advanced online news features. Consequently, we can expect to see more complete online coverage of the event compared with spot news events such as terrorism, weather, or natural disasters.

It follows that the Iraq War provided a good opportunity to test whether online newspapers would bring their most recent online journalism tools to bear. Not only did the war give journalists ample time to prepare for online news reporting, it also gave researchers the opportunity to test the normative foundations of online journalism—what online news “could” and “should” do—and compare if the potential for online journalism matches the reality of what is being produced by news organizations during a major news event. A snapshot of the online coverage of the Iraq War thus offers scholars and practitioners a “litmus test” for the times, providing a baseline that can be used as a comparison in future studies.

This study is one of the first to compare online news coverage between U.S. and international media. With a few exceptions (Chyi, 2006; Massey, 2000; Massey & Levy, 1999), most of the prior research in the area of online journalism has focused on U.S.-based media and their coverage of issues and events. There is a gap in research as regards international online news coverage.

Literature Review

Online Journalism

The explosion of online readers has caused some traditional media organizations to go online, although many more have struggled with the expense of online editions and primarily use the Web to recycle their printed copy in a new channel. While the possibilities for expanding and creating new ways to practice journalism are ever widening online, finding, publishing, and distributing information can be an expensive process. In many cases, the hype about the World Wide Web’s promise for the profession and the newspaper business has not been fulfilled. Meanwhile, convergent technology offers more options yet also places added demands on journalists. Below we briefly summarize the growth of online journalism and the elements that differentiate it from traditional media.

Online News Beginnings

Starting in the 1980s, proprietary services offered by America Online, Prodigy, and CompuServe delivered electronic versions of newspapers until the shift toward the

World Wide Web in 1994 (Garrison, 2005). From the beginning, online news proved to be a formidable competitor in the world of news providers. Although claims of which newspaper was first to go online vary, the *San Jose Mercury News* caused news providers to take notice in 1996 when the paper published a story online about the Central Intelligence Agency's links to the distribution of crack cocaine in Southern California (Garrison, 2005). Still, this was less an issue of a strictly online provider getting the best of a traditional news source, than a newspaper using the medium to disseminate its own content more quickly. The *Mercury News* is also credited with taking creative steps toward including links to original sources, a common practice in online journalism today.

Computers themselves were not originally envisioned as a communication medium; instead, engineers saw them as powerful tools for "number crunching" and data-handling tasks (Salwen, Garrison, & Driscoll, 2005, p. ix). As computers began to link together, however, originally for military and academic purposes and later in the early versions of World Wide Web software, the implications for communication became clear. By September 2000, over 360 million people over 12 years of age were online, accessing over one billion Web pages on five million servers (Gunter, 2003). In 2000, the number of U.S. households online outnumbered those subscribing to a daily newspaper (Garrison, 2005). By 2003, over 60% of U.S. households had a computer, with nearly 90% of them connected to the Internet (U.S. Department of Commerce, 2004). Although worldwide Internet statistics vary by methodology,¹ international Web users have grown from some 604 million in 2002 (Central Intelligence Agency, 2002) to over one billion estimated Internet users worldwide in 2005, with a projected growth of nearly one billion more by 2010 (ClickZ Stats).

Surveys conducted before the turn of the 21st century indicated that 82% of Internet users checked newspaper Web pages, second only to email usage in reasons given for using the World Wide Web (Strupp, 1999). A more recent study indicated that news remains among the most popular Internet activities (Lin, Salwen, Garrison, & Driscoll, 2005). Since, in theory, every Web site has as many potential readers as are online at any given time, the incentive for news organizations to develop Web presence is obvious, if not altogether well understood.

Characteristics of Online Journalism

Many scholars and practitioners have written about what constitutes online journalism and how the online newspaper of the future will differ from traditional print media. Despite the rich literature on online news and information delivery, there is no clear model to date to distinguish among the different stages of online journalism. Most descriptions focus on defining and measuring only one online feature, such as interactivity. Below, we discuss the different characteristics of online news and propose a three-stage model that can be applied to the online news coverage of the 2003 Iraq War.

Interactivity and Online News

Online presentation of news differs widely from traditional mass media in the level of interactivity and feedback available to readers. As a medium, the Internet presents information nonlinearly, at least in part. Traditional newspapers offer a variety of entry points for readers through the juxtaposition of many stories on a single page, but are still typically read from top to bottom, or at least in sections starting from the so-called home page. In theory, Web users should be able to switch from a story midway through to access information on another Web page, a feature that adds complexities to the writing and presentation of news (Gunter, 2003). The limited number of studies investigating the implementation of interactive elements on news sites, however, have shown that few of those nonlinear components are in place (Dibean & Garrison, 2005; Massey & Levy, 1999; Project for Excellence in Journalism, 2005; Thompson & Wassmuth, 2001). No consensus has been reached in terms of how to describe the process by which these technologies are adopted by news organizations, although the literature offers some guidance.

Personalization describes the ability of users to select news that is of interest to them while excluding other information, effectively customizing an electronic newspaper as they browse. This kind of interactivity with information is known as “pull” content. Another process, known as “push” content, is derived by asking readers to pre-select a series of topics that are of interest to them and then providing news stories at regular intervals that match the content selected (Deuze, 1999). PointCast software was among the first to offer electronic delivery of customized news this way, downloading articles as a screen saver on subscribers’ computers. Companies ultimately realized, however, that users preferred to browse information on their own, leaving the PointCast technology to be dubbed “the most uninstalled software in the world” (Deuze, 1999, p. 378).

The concept of interactivity itself presents several problems to researchers seeking to understand its application within the news dissemination context. Kiouisis (2002), in explicating interactivity, argues that within interactive elements, “roles of message sender and receiver should be interchangeable among participants” (p. 368). Further, he suggests that caution is necessary when evaluating the speed of communication (and by extension, specific technologies), as the state of the art is constantly shifting, along with user perceptions of those technologies. While “objective standards of speed (e.g., 28,800bps) might not change, ... users’ perceptions of them do” (Kiouisis, 2002, p. 369). However, the number of interactive elements offered to users can indicate the level of potential interactivity.

Heeter (1989) suggests that interactivity in new media technology is a “multidimensional concept” (p. 221), the components of which serve as a beginning for understanding the complexity of computer-mediated communication. Only four of the six interactivity dimensions proposed by Heeter directly pertain to categorizing online news sources measurable by observing available Web technology: complexity of content, responsiveness to the user, ease of adding information by consumers, and the extent to which a news site is a conduit for interpersonal

communication (Massey & Levy, 1999). Other studies have suggested similar frameworks for examining the use and extent of interactive content (Dibeau & Garrison, 2005; Heeter, 1989).

McMillan and Hwang (2002) recognize another multidimensional layer within the presentation of interactive elements: reader perception. Interactivity, they propose, involves three elements that are at work in the medium: the direction of communication, with a focus on enhancing two-way interaction as in conversation or in options for feedback; user control, which gives users the ability to move through content at will; and time, both in terms of technical message delivery and the pace at which users access information (p. 30). Web-specific technological features are what define interactive content in this study and separate online sources from traditional print or broadcast media. While McMillan and Hwang are critical of focusing on features as a way of understanding the concept of interactivity, their understanding of the elements at play in interactive media help to better parse the technologies offered by news practitioners.

Massey and Levy (1999) separate interactivity as it pertains to online journalism into two parts: content interactivity, defined as the ability of consumers to move at will through content; and interpersonal interactivity, the ability of audiences to engage in computer-mediated conversations through the Web site. This distinction highlights the difficulty in determining degrees of interactivity, given a variety of technological options.

Pavlik (1997) conceptualized online journalism as consisting of three main stages: Stage 1 involves repurposing the traditional news content and simply putting it online; Stage 2 involves augmenting the text content with evolving online news elements such as interactivity; and Stage 3 describes the use of advanced technologies for user immersion in the online news content (Pavlik, 1997). Immersive technologies have not become common to date, mostly because of cost-related issues. Yet a shift in the industry beyond repurposed content is clearly visible.

Building on the aforementioned literature and synthesizing previous research, we propose the following three-stage conceptual model of online news (See Figure 1). As Kioussis (2002) suggests, objective standards within the industry may change along with telecommunications infrastructure and computing developments. A staged model allows for evaluation of news organizations' use of technology and can be used to represent the evolution of online journalistic practices. This model is explained below.

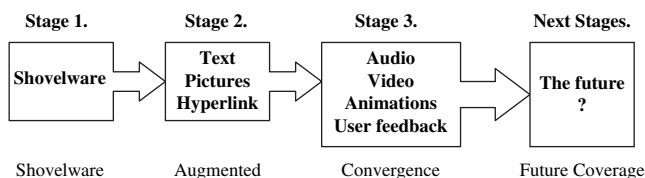


Figure 1 Three stages of online journalism

Stage 1: Shovelware

Most of what makes up news Web sites consists of stories recycled from the traditional media (such as newspapers and television broadcasts) and posted online in a practice known as “shovelware” (Deuze, 1999). While the 24-hour news cycle available to online audiences suggests the possibility of constant deadlines, online editions have yet to move significantly beyond electronic versions of the parent publication (Garrison, 2005). Quickly posting the print material is easy and cheap. However, providing online readers with the same content available in the traditional media does not take full advantage of the Web’s possibilities.

Stage 2: Augmented Online News Content

News organizations can augment their online news content in a number of ways. One simple and effective way is by adding hyperlinks. Paul (1995) explained how hyperlinks can enrich the user’s online journey by adding background information and providing more context to a developing news story. For example, links can serve as a way to break down a long story into logical pieces or “chunks” (Pape & Featherstone, 2005). In the case of the Iraq War, rich historical data about the countries involved in the conflict as well as useful background information can be added to traditional news reporting. Adding hyperlinks also gives readers more options for personalization or “individualization” (Deuze, 1999, p. 378). By inserting hyperlinks into online text, readers can access archived stories, read original source material, or contact journalists with the click of a mouse.

The Web also allows news producers to incorporate enhanced visual content. The easiest way to achieve that is by adding pictures. While traditional print media typically allow for a limited selection of images, news organizations have the ability to create online galleries that give users access to more visual content. Photographs are effective in augmenting the textual content and focusing the attention of the online reader on the most interesting aspects of the news report.

Stage 3: Convergence

For journalists, the Internet’s ability to provide personalized, nonlinear reporting with possibilities for streaming video and audio opens new doors in terms of presentation style. Known as convergence, traditional text could be blended with moving images, sound, and links to more information all within the same story. Deuze (1999) sees this melding of forms as a feature primarily geared toward journalists rather than audiences. Convergence gives audiences choices, but the technology also allows journalists more freedom to present news in a variety of ways. While the definitions of convergence vary, most authors agree that it typically involves incorporating multimedia (a blend of text, audio, and video content used to convey information) in the online news environment.

In addition to multimedia content, the third stage of online journalism involves opportunities for the user to engage more fully with online content beyond simply clicking on hyperlinks. This stage in our model offers online news readers access to

features such as chat rooms, discussion forums, and online polls, which allow them to express opinions and provide input about the news content (Dibeau & Garrison, 2001). Conceptually, these interactivity options relate to the interpersonal interactivity dimension described above (Massey & Levy, 1999).

The Future

Pavlik's early (1997) discussion of the stages of online technology included much wishful thinking in the realm of convergence, involving truly immersive technologies and three-dimensional experiences. While communication technology clearly continues to stretch boundaries (and bandwidth), it seems premature to lump tools that are currently available, such as streaming audio and video, with cutting-edge ideas that have yet to be implemented on a wide scale. Still, it is important to recognize that future online news content is likely to be truly different and may involve more advanced and perhaps yet unforeseen online features.

Research Questions

Based on the three-level framework proposed above, we formulate the following research questions:

RQ1: What online journalism features did the leading U.S. online newspapers use to cover the 2003 Iraq War on their Web sites?

RQ2: What online journalism features did international online newspapers use to cover the 2003 Iraq War on their Web sites?

RQ3: Were there any notable differences in the online journalism features used by U.S. and international newspapers in their online coverage of the 2003 Iraq War?

The scarcity of prior research comparing online news coverage of the same event between U.S. and international media does not allow us to formulate specific expectations about cross-cultural differences. Based on literature on newsworthiness values, however, one might expect that the U.S. is likely to provide more specials and other online features to the user since the relevance of the event is presumably higher for U.S. audiences. U.S. online readers are more likely to be interested in how the U.S.-led war is progressing, the plight of American soldiers, soldiers returning home to their families, and the effects of the war on U.S. foreign policy. These questions are related to another newsworthiness criterion—impact, and they invite the use of “new” tools of storytelling in an online environment. Since major news organizations worldwide represent the leading edge of reporting trends and technology adoption, it is expected that those organizations would use more advanced online news features.

Methodology

Content analysis methodology was employed in the study. The home pages of 26 online newspapers were captured through manual downloading of their Web

sites. Among the news sites included in the analysis were the online versions of the *New York Times* (U.S.), *The Guardian* (United Kingdom), *The Australian* (Australia), *Mainichi Daily News* (Japan), *Bangkok Post* (Thailand), and *El Mundo* (Spain) among the Coalition countries, and *China Daily* (China), *El Universal* (Venezuela), and *Al Ahram* (Egypt) among the non-Coalition countries. A complete list of the online newspapers analyzed in this study is given in the Appendix. The sample also included the online editions of leading U.S. regional newspapers such as the *Atlanta Journal-Constitution*, the *Miami Herald*, and the *Philadelphia Inquirer*.

The time frame of the content analysis was limited to the official war period, March 1, 2003 to May 1, 2003. The findings of this study should be placed in the context of that year (2003), as Web developments continue to take place and online journalism features continue to evolve.

The unit of analysis was the home page of the online newspaper, defined according to Li (1998) as the "initial site of a newspaper on the World Wide Web, and it provides information both directly and via links to other files of the same publication or to files on other computers located on remote networks" (p. 357). The home pages were downloaded and saved daily by trained students at the University of Florida during the official war period. This resulted in a total of 791 home pages that constitute the basis for analysis. The initial number of home pages downloaded was slightly higher; home pages that did not provide any content related to the 2003 Iraq War were discarded.

The coding process involved, first, training a number of undergraduate and graduate students on a predefined code sheet and then asking them to code the initial home pages under supervision. Each student coder was proficient in English. In cases when the online newspaper was published in a language other than English, e.g., Spanish, a Spanish-language coder was recruited and asked to complete the coding. An intercoder reliability check was conducted on a sub-sample of the English-language online newspapers since English was the common language for all coders. Using Holsti's formula, intercoder reliability was established at .88.

The variables pertinent to this study involved the use of Web-specific features in the online news coverage of the 2003 Iraq War. First, we were interested in capturing visual content; thus, coders recorded the number of war-related photos present on the home page. Next, the source of the photograph, if provided, was coded. In addition to photographs, hyperlinks were recognized as another common way to augment online content. The coders recorded the number of hyperlinks about the war. Specific characteristics of the hyperlinks such as link prominence and link destination (external versus internal links) were also recorded (Dimitrova, Connolly-Ahern, Williams, Kaid, & Reid, 2003).

Online multimedia features were of additional interest. As in Massey and Levy (1999), multimedia was defined as digitized audio and video. The format of the content was not of particular importance; therefore, no distinction between streaming or downloadable multimedia was made. Another category captured the use of animated graphics; coders recorded the number of animated graphics on the home

page, such as Flash maps or other items specifically built for the online environment. Finally, we coded for the number of interpersonal interactive elements used in the online war reporting. These elements included online polls, feedback forms, chat rooms, and discussion forums related to the Iraq War.

Coders also noted the name of the online newspaper, the country of origin, whether or not the country was a member of the multinational coalition deployed in Iraq, the time zone of the publication (difference in hours from Greenwich time), and the date of publication.

Results

A total of 791 home pages of 26 online newspapers from 17 countries were analyzed for the use of online journalism features in their online coverage of the 2003 Iraq War. As shown in Table A in the Appendix, 10 news sites came from the U.S. and 16 originated from other countries.

Online Features

The most popular Web-specific features were hyperlinks and photos, both of which characterize Stage 2 of the online news journalism model proposed above. The use of multimedia content, animated graphics, and interactive features was clearly less frequent.

Photos

War-related photographs were present in 74.6% of the home pages. The number of photographs ranged from zero to six per home page ($M = 1.04$, $SD = .903$). The number of photos was broken down into three categories: home pages with no war-related photographs (25.4%), home pages displaying one photo (54.6%), which was the majority of the cases, and home pages containing two or more photos (20%). Associated Press was given as the sources of the photographs in about one quarter of the cases. Reuters and Agence France Presses (AFP) were less common photo sources.

Hyperlinks

Of the 791 home pages examined, only 10 (1.3%) contained no war-related links. Apparently, hyperlinks have become an established feature of online news. The number of links in our sample ranged from 0 to 53 per home page ($M = 14.43$, $SD = 10.547$). The use of hyperlinks was further broken down into three categories: low level of use of hyperlinks (0-6 links), medium level of use (7-22 links), and high level of use (23-53 links). A total of 226 home pages were categorized in the low level (28.6%), 373 (47.2%) home pages in the medium level, and 192 (24.3%) home pages in the high level group. This distribution indicates a varied level of use of hyperlinks. Similar to the online coverage of other conflict events, the majority of the links were to internal archival content (Dimitrova, Connolly-Ahern, Williams, Kaid, & Reid, 2003). Very few of the home pages (8%) provided links that connected users to external online material, despite the theoretically limitless possibilities for external linking.

Multimedia

Multimedia was defined as audio and video content available on the online newspapers' home pages. Videos were more common than audio features, perhaps because video content has a more powerful impact than audio in the online environment. Less than 17% of all online newspapers provided any video content. Only 11% offered any audio content such as interviews with military personnel or streaming audio of political speeches. Overall, the use of converged online content, a characteristic of Stage 3 online journalism, was relatively rare.

Animation and Interactivity

Animated graphics about the war were incorporated in 24% of the 791 home pages. These custom-built graphics were specifically designed for the online environment and often included examples of military equipment (e.g., military aircraft) or maps of the war region. The frequency of use of interactive features in the online war coverage was similar to the frequency of use of animated graphics. Interactive elements included polls, feedback forms, chat rooms, and discussion forums related to the Iraq War. Such features were present in 26% of the home pages examined.

To summarize the answers to Research Questions 1 and 2, it seems that both U.S. and international newspapers offered online features that reflect Stage 2 of the online journalism model developed in this study. Clearly, photographs and hyperlinks had become common features of online reporting as of March-April 2003. More advanced Web elements that pertain to Stage 3 of the online journalism model, such as multimedia (digitized audio and video content), animations, and interactive elements remain relatively rare. Moreover, among the online features of Stage 3, interactive features and animated graphics were somewhat more common than audio and video content, as shown in the ranking in Table 1. One possible reason for this trend may be cost: Online newspapers may need to purchase multimedia content from other news providers or may need to train their online print reporters how to record video and audio from the event for online editions. Another possible explanation for this trend

Table 1 Web features used in U.S. and international online newspapers

Rank	Web Feature	U.S. Online Newspapers	International Online Newspapers	All
1	Links	345 (100%)	436 (97.8%)	781 (98.7%)
2	Photos***	294 (85.2%)	296 (66.4%)	590 (74.6%)
3	Interactive elements***	111 (32.2%)	98 (22%)	209 (26.4%)
4	Animated graphics***	107 (31%)	82 (18.4%)	189 (23.9%)
5	Video	56 (16.2%)	76 (17%)	132 (16.7%)
6	Audio***	58 (16.8%)	26 (5.8%)	84 (10.6%)
	Total	n = 345	n = 446	N = 791

Note: *** indicates Chi-square significant at the $p = .000$ level

may be linked to editorial decision making: Editors of the online newspapers may perceive interactive options as more important to their online readers. If this is the case, early academic writings about “engaging” audiences in a new way online may have shown prescience about how the field would emerge. However, future research employing a survey or interviews with online news editors is needed to explore this possibility.

War Coverage in U.S. versus International Online Newspapers

The third research question asked about the differences between the U.S. and international newspapers in their online coverage of the 2003 Iraq War. In order to explore such differences, Chi-square comparisons were run between the two groups of online newspapers. As Table 1 shows, statistically significant differences were found in four out of the six categories of online features.

No significant differences were found between U.S. and international newspapers in their use of hyperlinks and digital video content. However, interesting differences emerged regarding Web photos, animated graphics, interactive elements, and audio content. In all cases, the U.S. news sites were more likely to include such online features to augment their online coverage. For example, 85.2% of the U.S. sites included one or more photographs about the war, compared to 66.4% of the international sites. Similarly, only 5.8% of the international sites incorporated any audio about the war on their home pages, compared with 16.8% of the U.S. sites.

Again, we can only speculate about the possible reasons for these differences. One such reason may be related to cost: Lack of either financial or human resources to create more converged online content. Another possible reason could be the different target audiences for the international sites, which is difficult to measure in the present study since a variety of international newspapers were combined into one group. If we take the *Bankok Post* (out of Thailand) as an example, however, we can arguably expect that its main target audience is Thai Internet users who do not have easy access to broadband connections. Putting multimedia content for users on modem connections could slow down the downloading process and make viewing the online newspaper site tedious and cumbersome. Bandwidth restrictions, however, were outside the scope of this study.

Discussion

This study is among the first to examine the online news coverage of the 2003 Iraq War in online newspapers from different countries from the perspective of online news and online journalism. Perhaps the most interesting finding of the study is that online journalism has not yet progressed from the so-called “augmented content” stage to the “convergence” stage discussed in earlier scholarship. It seems that although multimedia content, interactive features, and animations were occasionally used in the online war coverage, these features remain relatively rare.

On the other hand, the online newspapers examined here have clearly moved beyond the “shovelware” stage of online journalism and have begun to incorporate

hyperlinks and pictures regularly in their news reporting on the Web. This promising trend was evident in both U.S. and international news sites. Another promising finding is that interactive features such as online polls, discussion postings, and chat rooms seem to be more popular than multimedia content, at least in the online news coverage of a major news story such as the 2003 Iraq War. Such interactive features are arguably more effective in engaging younger online users and raising their awareness of international events.

Multimedia content as described in Stage 3 of the online news model demands more considerable investment in human resources and technology than a chat room or an online poll. Converged media can be a powerful tool for journalists in covering complex stories. However, in terms of interactivity, interpersonal interactive elements provide a range of feedback options to readers. Interpersonal interactive elements go farther to empower readers and fulfill the Web's promise to democratize media. The advent of more interactive online news features might also allow for immediate online discussion and analysis of issues among online readers, which is the opposite of top-down communication.

Stage 3 of the online news model proposed here brings other benefits to the user. Arguably, it provides a new and unique method of storytelling that uses multiple media channels (text, audio, and video). It is possible that this way of storytelling is beneficial to the news consumer and could make online news more enjoyable, broadening its distribution and furthering its effectiveness. Another potential benefit is the possibility for readers to choose personally relevant news and follow stories in-depth, thus providing individual readers more comprehensive coverage of an issue or event of interest.

Converging media by combining audio and video with text not only enriches the presentation of a story, it also takes full advantage of the online medium. Especially for international events that take place in remote locations, the benefits of more involved news presentation are many. For example, interactive maps can be used to show readers where and how events are taking place; multimedia slide shows can provide background information about the parties involved; and video can convey the urgency of real-time reports. Online users may soon expect to see such features present on a regular basis.

Limitations and Future Research

The main limitation of this study is that only one event was examined, the 2003 Iraq War. Other major events, especially breaking news, may present other opportunities for convergence that would result in different levels of online coverage. It is important to note as well that the Web sites selected for examination represent leading international news media, which differ from smaller media organizations. A further limitation is that our analysis focused only on the official period of combat operations in Iraq. At the same time, the present study offers a baseline for other research, even into the same conflict. For example, since considerable fighting in

Iraq continued past the official period of combat operations as defined by the U.S. government, news organizations may have broadened or redefined online coverage since 2003. Future studies should conduct such a comparison.

Little information about the number of Internet users who had access to the online newspapers under examination was found. Therefore, it was impossible to examine the frequency of use of interactive features or how online readers perceived such features. Future studies could expand the three-stage model proposed here to differentiate between readers' patterns of use and journalists' perceptions and intended use, a fruitful area for future interview or focus group research. Additionally, readers' use of interactive features and news organizations' potential for offering constant updates were not a part of this study. The insights gained by tracking Web-specific features over the course of a major news event should give future researchers a platform from which to launch deeper investigations of these elements.

The future of online journalism remains unclear. Journalism, like any another profession, is based on established routines and practices. To change these practices and become innovators takes both time and resources. While we did not address the financial restrictions behind maintaining a top-notch online news site, dedicating both monetary and human resources to online editions goes a long way toward determining the content available to readers, yet may be out of reach for smaller media outlets. Obviously, access to the Internet varies within countries and internationally in terms of availability and technology, especially limitations on available bandwidth even in nations providing a reasonably reliable infrastructure. News organizations should be sensitive to the technological specifics of their coverage area, not only when defining their own interactive features but when considering how to serve readers.

Finally, the findings of this study should be placed in the context of the Iraq War, an event that took place in 2003. Online journalism has certainly evolved since then; we can only capture a glimpse its development by examining the online news content during that time. Despite the limitations of this snapshot approach, we believe that the three-stage model of online journalism can be useful and applicable to online coverage of other news events, and that our findings can serve as a benchmark for future scholars and practitioners who follow online journalism into the next era.

Note

- 1 Estimates vary based on how many countries are tracked to gather Internet user data and how users are defined according to each study. See ClickZ Stats for descriptions of and links to the methodology that produced the estimates.

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Appendix

Table A List of online news publications analyzed in this study

Publication Name	Country of Origin	Frequency	Percent
<i>International Media</i>			
Al Ahram	Egypt	33	4.2
Al Jazeera	Qatar	22	2.8
Bangkok Post	Thailand	21	2.7
China Daily	China	18	2.3
Clarín	Argentina	29	3.7
East African Standard	Kenya	20	2.5
El Mundo	Spain	30	3.8
El Universal	Venezuela	59	7.5
Granma	Cuba	25	3.2
International Herald Tribune	France*	34	4.3
Irish Times	Ireland	35	4.4
Mainichi Daily News	Japan	33	4.2
Nación	Costa Rica	6	.8
New Zealand Herald	New Zealand	37	4.7
People's Daily	China	25	3.2
The Australian	Australia	34	4.3
The Guardian	UK	19	2.4
<i>U.S. Media</i>			
Atlanta Journal-Constitution	USA	40	5.1
Baltimore Sun	USA	31	3.9
Boston Globe	USA	39	4.9
Chicago Tribune	USA	24	3.0
Dallas Morning News	USA	39	4.9
Miami Herald	USA	40	5.1
New York Times	USA	38	4.8
Philadelphia Inquirer	USA	21	2.7
Washington Post	USA	39	4.9

Notes: N = 791 home pages. The *International Herald Tribune* is an international newspaper owned by *The New York Times*, but its headquarters is in Paris so we designate country of origin as France.

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