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Journalism Studies

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713393939>

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First published on: 27 August 2009

To cite this Article Karlsson, Michael and Strömbäck, Jesper(2010) 'FREEZING THE FLOW OF ONLINE NEWS', Journalism Studies, 11: 1, 2 – 19, First published on: 27 August 2009 (iFirst)

To link to this Article: DOI: 10.1080/14616700903119784

URL: <http://dx.doi.org/10.1080/14616700903119784>

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FREEZING THE FLOW OF ONLINE NEWS

Exploring approaches to the study of the liquidity of online news

Michael Karlsson and Jesper Strömbäck

According to previous research, two characteristics of online news as opposed to traditional news are interactivity and immediacy. However, most research in this area has focused on the news site-level of analysis, and there are only a few studies on how interactivity and immediacy affect online news on the news story-level of analysis. The main reason for this appears to be that the very nature of online news makes observation by traditional research methods, such as quantitative content analysis, problematic. Against this background, the overall purpose of this paper is to explore methodological approaches for the study of interactivity and immediacy on the news story-level of online news. The paper develops a three-pronged strategy for freezing the flow of online news to enable systematic content analyses of interactivity and immediacy, and tests this strategy in a comparative analysis of the online news sites Guardian.co.uk in Britain and Aftonbladet.se in Sweden.

KEYWORDS comparative research; content analysis; immediacy; interactivity; online news

Introduction

Since the introduction of the World Wide Web in the mid-1990s, the media environment and the conditions that journalism operates under have changed dramatically. This has challenged both traditional notions of what journalism is and research on news journalism.

For example, traditional news journalism is characterized by a clear demarcation between news producers and news consumers, and news content is distributed at predictable and recurring points in time. In contrast, online news production is set in a digital environment, which influences news production processes as well as news content. Thus, in contrast to news in traditional newspapers, news stories on websites never *leave* the producer entirely (Jensen, 1998, p. 191), which means that journalists can continue to work on, revise, or add to the news stories even after they purportedly have been published (Manovich, 2001, p. 27). The abolition of deadlines has furthermore increased the speed with which the news is being published (Hall, 2001), while the interactive nature of online and digital media (Rafaeli and Newhagen, 1996) blurs the distinction between producers and consumers.

Several observers have thus claimed that online news, among other things, is characterized by *immediacy* and *interactivity*. Taken together, immediacy and interactivity furthermore make *liquidity* (Deuze, 2006, 2008) one important characteristic of online as opposed to traditional news.

However, while there are studies showing that immediacy and interactivity characterize online news at the *news site-level of analysis*, there are only a few studies focused on how

Journalism Studies, Vol. 11, No 1, 2010, 2–19

ISSN 1461-670X print/1469-9699 online

© 2010 Taylor & Francis DOI: 10.1080/14616700903119784

immediacy and interactivity affect online news at the *news story-level of analysis*. The main reason for this appears to be that the very nature of online news makes observation by traditional research methods, such as quantitative content analysis, problematic (Kopper et al., 2000; McMillan, 2000). Hence, there appears to be a need to develop new strategies for systematic content analyses on how interactivity and immediacy shape online news stories.

Against this background, the overall purpose of this article is to explore approaches for the study of interactivity and immediacy on the news story-level of online news. More specifically, the purpose is threefold: first, to analyze some of the features that separate online news from traditional news and assess how scholars have tried to solve the challenges that online news pose reflecting its distinctive character compared to traditional news; second, to suggest strategies for freezing the flow of online news in order to enable systematic research on immediacy and interactivity at the news story-level of analysis; third, to test the proposed strategies in a comparative study of the online versions of the British newspaper *The Guardian* and the Swedish newspaper *Aftonbladet*.

Characteristics of Online News

Online news differs in a number of important respects from traditional news. Some of the special characteristics of online news, as identified by previous research, are *convergence* (Burnett and Marshall, 2003; Stevenson, 2002), *immediacy* (Deuze, 2003; Massey and Levy, 1999; Pavlik, 2000) and *interactivity* (Boczkowski, 2004; Cover, 2006; Deuze, 2005). Taken together, these special characteristics suggest a fourth, defining characteristic of online news: its liquidity (Deuze, 2006, 2008). Although all of the special features suggested above are important, in this paper we will focus on *immediacy* and *interactivity* which, taken together, contribute to the liquidity of online news.

While most observers would agree that *interactivity* is a central characteristic of online news, there is no agreed-upon definition of interactivity and how it should be measured (Dimitrova and Neznanski, 2006; Kiousis, 2002; McMillan, 2002; Rafaeli and Sudweeks, 1997; Richards, 2006; Steuer, 1992). Partly this is due to the various intellectual perspectives that have informed theory and research on interactivity (Kiousis, 2002), but another problem is the multidimensional nature of interactivity and that many scholars choose to study specific aspects of interactivity rather than providing a comprehensive explication or investigation.

Nevertheless, there is a scholarly consensus that the architecture of digital media allows more interactivity than offline, analogue media. Beyond that, when explicating the concept Kiousis (2002, p. 372) suggests that interactivity "can be defined as the degree to which a communication technology can create a mediated environment in which participants can communicate (one-to-one, one-to-many and many-to-many), both synchronously and asynchronously, and participate in reciprocal message exchanges (third-order dependency)". This definition attempts to synthesize other definitions of interactivity, and tries to strike a balance between interactivity as a structure of technology, as communication context, and as user perception. It is also consistent with Steuer's suggestion (1992, p. 84) that interactivity is about "the extent to which users can participate in modifying the form and content of a mediated environment in real time".

Interactive features open up the possibility of having co-created content on news sites, hence blurring the sender-receiver dichotomy. The implication is that interactive features result in new negotiations between "producers" and "users" regarding the

content of online news sites, partly replacing the old model of the media imposing the content on users whose only option is to consume or not to consume the news. While negotiations between the media and various political, commercial, organizational, societal and cultural features and actors are not new (Shoemaker and Reese, 1996), what is new is that these interactions now take place in real-time within specific news stories and with journalists losing some of the control of the news stories even after they have been “published”. When users are allowed to add information to news stories, it might furthermore disarrange the traditional predictable and recurring news cycle, as the discourse surrounding a news story can continue and attract attention even if the news story itself is not updated.

The term *immediacy* refers to the notion that the news cycle with respect to online news—and, in extension, the news cycle as such—has become radically shortened (Singer, 2003) and that the time lag between when a news organization becomes aware of an issue and publishes information about it has been radically shortened. The shortened news cycle is also present in 24/7 broadcast news, but where such broadcast news present their news stories in a linear sequence and visibly incorporate any changes in subsequent news stories, this is not the situation in online news where thousands of news stories are simultaneously published and updates are not necessarily highlighted.

In a situation where it is considered important to publish the news before competitors do (Avilés et al., 2004), there is only limited time for journalists to process and verify information before publishing it. As information is rushed out there is an obvious risk that the first news accounts remain incomplete. This creates a need to publish developed versions later, thus making online news stories appear in different drafts (Hall, 2001, p. 55) before the final versions are published. The final versions might even be published after people’s attention to the stories have faded away, meaning that most people might read news drafts rather than full and verified news stories.

Compared to interactivity, immediacy has received less scholarly attention and has predominantly been viewed from an “accuracy problem”-perspective (Avilés et al., 2004; Gunter, 2003; Deuze and Yeshua, 2001; Kopper et al., 2000; Kovach and Rosenstiel, 1999; Scott, 2005; Seib, 2001). The main question has been how online news lives up to traditional journalistic standards when there is virtually no time to process and verify information before the news stories are initially published, and, consequently, whether online news should be judged using standards other than those applied for traditional news.

Taken together, interactivity and immediacy illustrate the *liquidity* of online news as compared with traditional news. Most importantly, *interactivity* enables users to add information to the news content or context, thus giving the news different appearances over time without this process necessarily being directly controlled by the news organization. *Immediacy*, on the other hand, enables those working for online news media to continuously change, tweak or erase any published content. On the Internet there can thus be “Ten o’clock news”, but also “Nine hours, thirty-seven minutes and fourteen seconds o’clock news” and so on.

Granted, it is the media organizations that decide whether to embrace interactive features and accommodate to immediacy. To the extent that news organizations do embrace the special characteristics of online news, it nevertheless poses challenges to scholars with a need to study online news on the news story-level of analysis, no matter whether the focus is on how news stories are affected by immediacy or interactivity, or

whether scholars need to study online news while taking the special characteristics of online news into consideration. How, then, have researchers faced the challenge of analyzing online news stories while taking the special characteristics of online news into consideration?

Researching Content of Online News

Since the mid-1990s, the importance of the Internet has grown dramatically. This has sparked scholarly interest in online news and its antecedents, special characteristics and content, and effects on journalistic production processes and audiences. However, the same special characteristics that sparked the scholarly interest in online news present empirical research with new challenges, particularly with respect to systematic content analyses (McMillan, 2000).

Perhaps this is one of the major reasons why many studies focusing on interactivity and immediacy do not rely upon content analysis. On the contrary, most studies on interactivity and immediacy focus on the producers or users of online news, using methods such as ethnographic studies (Boczkowski, 2004; Paterson and Domingo, 2008), interviews (Brill, 2001; MacGregor, 2007; O'Sullivan, 2005; Singer, 1997) and surveys (Arant and Anderson, 2001; Bergström, 2008; Brill, 2001; Deuze and Paulussen, 2002; O'Sullivan and Heinonen, 2008; Quandt et al., 2006). These and other studies have provided valuable knowledge about how journalists and other social actors view interactivity and immediacy, but less knowledge about how interactivity and immediacy shape the content of online news stories.

With respect to research that has focused on interactivity on news websites, this has mainly focused on the extent to which news sites—rather than individual news stories—offer opportunities for interactivity (Chung, 2007; Dimitrova et al., 2005; Domingo et al., 2008; Kenney et al., 2000; Massey and Luo, 2005; Oblak, 2005; Paulussen, 2004), or whether the level of interactivity has changed over time (Bucy, 2004; Greer and Mensing, 2006; Tremayne, 2005, 2006). While these studies have established that the level of interactivity has increased over time, overall they do not go in any depth into the actual news stories and how they are shaped by interactivity. These studies provide a setting and a rationale for studying interactivity at the news story-level of analysis, but they do not provide an answer to questions about how news stories are affected by interactivity (and other features, see below), and whether there are any changes over time.

The lack of research at the news story-level is even more apparent with respect to the immediacy of online news. While there are some exceptions (Karlsson, 2007; Kutz and Herring, 2004; Salaverria, 2005), most studies only provide examples *illustrating* immediacy (Hall, 2000; Seib, 2001) rather than systematically *investigating* immediacy. Several studies acknowledge the continuous news cycle of online news compared with traditional media (van der Wurff, 2005; Mensing and Greer, 2006), but how the continuous news cycle affects online news stories is rarely investigated. Hence, the “accuracy discourse” is still mainly a theoretical construct (Kopper et al., 2000).

The main reason for the lack of content analyses of immediacy on the news story-level appears to be that the rapid development of online journalism defies observation by traditional research methods (Kopper et al., 2000). As noted by Deuze:

the study of content has always rested on the premise that content actually exists, that it genuinely can be considered as a finished, static object of study. In the current media

ecology of endless remixes, mashups, and continuous edits, that is a problematic assumption. (2008, p. 861)

Furthermore, despite the notion that both interactivity and immediacy are consequences of the reprogrammable and interactive nature of digital media, there are virtually no studies that *simultaneously* investigate how interactivity and immediacy affect the content of online news. This is problematic, as it inhibits the prospects of understanding how interactivity and immediacy interact and together contribute to the liquidity of online news.

In other words, while most scholars would agree that interactivity and immediacy are important characteristics of online as opposed to traditional news, most research does not empirically investigate the impact of interactivity and immediacy on the actual news content at the news story-level of analysis, and most studies do not combine research into the interactivity and the immediacy of online news. This suggests that there is a need for new research strategies for freezing the flow of online news in order to enable systematic content analyses, either of the special characteristics of online news themselves or in general.

Strategies for Content Analyses of Online News

Based on the above, there are several problems with existing research on the content of online news. The first is that there are still rather few systematic studies of the content of online news. The second is that few analyses of online news content take the special characteristics of online news into consideration, hence disregarding the interactivity and immediacy of online news. The third is that research on the interactivity and immediacy of online news mainly focuses on the news site-level rather than the news story-level of analysis. Fourth, and consequently, there are still only a few studies on the extent to which online news stories are affected by immediacy and interactivity.

How, then, could the flow of online news be frozen to enable systematic content analyses of interactivity and immediacy on the news story-level of analysis? One possible strategy might be to follow closely a selected number of news stories from their first publication and onwards to investigate changes in the content or context of the news stories and how the interplay between “news producers” and “news consumers” unfolds. A second strategy builds upon the notion that the placement of the news stories is important, i.e., that it is important not only *how* a news story is told but also *where* it is told. In research on traditional news media it is thus common to distinguish between, for example, stories on the front pages and stories buried within the newspapers. With respect to Web pages, the most important spot is the front page, which is the first page a visitor sees and where the news media publish the stories that they believe are most important or interesting (Bucy, 2004; van der Wurff, 2005). A second strategy for studying immediacy on the news story-level of analysis would thus be to measure to what extent news stories disappear from the top of front pages or from the front pages altogether. Consequently, a third strategy for studying immediacy on the news story-level of analysis might be to study how many top stories the front pages of online newspapers have during one (or several) days and how the position of the top stories is rearranged on the front pages. Taken together, these strategies would provide different means for studying interactivity and immediacy while focusing on both the news site-level and the news story-level of analysis.

If this three-pronged strategy is adopted, there are various means to gather the content of online news sites to allow for further analysis. Five of the most common

methods are to download screenshots, download PDF files, manual downloading, using the news sites' RSS feeds, and using programs like WinHTTrack. Each of these methods has some advantages and disadvantages.

Using Screenshots

The advantage with taking screenshots is that everything that is on the screen is captured, including forms of interactivity that are presented on the websites. The disadvantages with taking screenshots are several, including that audio, moving images and what is outside of the frame of the screens is not captured, that it only captures fractions of the first layer of content, and that links cannot be used.

Using Saved PDF Files

PDF files extend the screenshots' ability to a full Web page, but apart from that, PDF files suffer the same shortcomings as screenshots and add two shortcomings; PDF files do not capture all forms of interactivity, and sometimes printing a PDF from a website will trigger the built-in "printable version", thus only capturing the text of a specific news item.

Using Manual Downloading

The advantage with downloading Web pages manually is that the download is specifically directed at capturing certain content and that it is easy to check afterwards whether the relevant content was captured. The main disadvantages are that manual downloading is very time-consuming and hence restricts how much content can be downloaded, that audio and moving image will not be captured, and that some forms of interactivity will not be captured.

Using RSS Feeds

Many news sites have RSS feeds that are updated every time a news story gets updated. While this is excellent in covering the textual changes in a specific news story, it takes away the context in which the news stories are presented. Hence, using RSS feeds does not include interactivity, where on the website a news story is published, and the story's relation to other stories. RSS feeds also reintroduce the transmission mode of communication as it "pushes" out information to the users, and are also usually void of convergence features.

Using Download Programs

Using download software such as WinHTTrack has many advantages, as the software can be programmed to download different layers of the website or the entire website, thus allowing the scholar to navigate through the downloaded content as it looked at the time of downloading and in the order it was presented on the website. There are, however, some disadvantages using download software, including difficulties to capture multimedia content and some forms of interactivity that are, although in appearance, not technically on the website. These forms of interactivity are thus excluded when using

download software. In addition, the downloading takes significant time when the software is programmed to download many layers of a website.

Thus, no single method for downloading and capturing the content of news sites to facilitate content analysis is perfect. In our exploratory study of the three-pronged strategy outlined above, we will hence use a combination of download software, screenshots and manual downloading. The methodology and objects of study are further described in the next section.

Methodology and Objects of Study

To reiterate, one of the purposes of this study is to test the proposed strategy for freezing the flow of online news in order to study it systematically. To do this we have selected the online versions of two major newspapers, one in Britain and one in Sweden. The rationale for choosing online newspapers in different countries is that there might be differences across countries; by including online newspapers from more than one country, the validity of the research can be increased. The rationale for including Sweden is that Sweden was one of the first countries to embrace the Internet (Deuze et al., 2007) and that Sweden continues to have a very high Internet penetration (Findahl, 2008). The rationale for including Britain is that news sites from the United Kingdom are widely used not only by domestic audiences, but also by international readers, particularly when international news events such as wars and crises are happening (Hall, 2001, p. 17).

The online newspapers chosen for analysis are *The Guardian* in Britain and *Aftonbladet* in Sweden. The former has been on the Internet since 1999 and the latter since 1995. Both belong to the most widely used news sites in Britain and Sweden, respectively.¹ While it would have been desirable to include more online newspapers from different countries, considering that this is an exploratory study to test strategies for freezing the flow of online news in order to study it empirically, we believe that the inclusion of two important newspapers from two countries is sufficient. In the next section we will present in detail how we tested the proposed three-pronged strategy.

Analyzing the Flow of Online News

The first proposed strategy for freezing the flow of online news is to closely follow a selected number of news stories from their first publication and onwards, to investigate how they change over time. As online news stories can change within seconds, the ideal would be to capture every version and context of every news story. That is, however, a gargantuan task; hence, a trade-off has to be made between the number of news stories included in the study and the number of downloads of the included news stories.

As this is an exploratory study, we decided to include the online versions of one news story that was covered by the online versions of both *The Guardian* and *Aftonbladet*. The news story was about an alleged storming of an airplane at Cologne airport, published on September 26, 2008. To track this story, we manually downloaded and took screenshots of this news story when it was first published, starting at 9 am GMT + 1. The news story was then continuously monitored every 10 minutes until 3.30 pm the same day, and we also monitored the news story at 5.00 and 11.00 pm the same day and at 12.00 am the following day. Every time the content or the context of the story changed, it was manually downloaded for further analysis.

The next step in the analysis is to decide what variables are of interest, and this is of course dependent upon the purpose of the research. Nevertheless, to illustrate how it might be possible to capture the liquidity of online news, in this study we focused on eight different aspects and tracked how the content of each of the downloaded versions of the chosen news story changed across these aspects. The first six aspects are related to what is commonly referred to as the basic questions that a news story should answer, i.e., What, Who, How, When, Where and Why (Kovach and Rosenstiel, 2001; Singer, 2008). In addition, we investigated (1) the use of identifiable news sources and (2) whether, in what form, and to what extent users were participating in the news production.

As already noted, the news story we decided to focus on was about an alleged storming of an airplane at Cologne airport, published on September 26, 2008. The immediacy and liquidity of online news is suggested by the fact that *Aftonbladet.se* published eight, more or less different, versions of this news story, whereas *Guardian.co.uk* published three more or less different versions.


In Figure 1, the first and the final version of the news story as it was published on *Guardian.co.uk*, and the degree to which the news story in these two versions addressed the eight dimensions discussed above, are highlighted. In Figure 2, three of the versions published on *Aftonbladet.se* are similarly highlighted.

As illustrated by Figures 1 and 2, there were both similarities and differences between the coverage of this particular event on *Guardian.co.uk* and *Aftonbladet.se*. In both cases, the news story changed over time with respect to how the arrest was described, from elite military forces storming the airplane to prevent an imminent holy war or suicide attack to a

| | | | |
|--|--|---|---|
| Publication: <i>Guardian.co.uk</i> News story: Storming of plane Time of download: 10.50 am Version: 1 | guardian.co.uk News Sport Comment Culture Business Money Life & style : News World news Germany Terror suspects arrested as German commandos storm aircraft Men had been under police observation for months and wanted to carry out a 'holy war' Angela Balthasar and agencies guardian.co.uk Friday, September 26 2008 09:45 BST Article history German commandos stormed a KLM airliner at Cologne-Bonn airport today and arrested two men who were suspected of wanting to carry out terrorist attacks, according to reports. The commandos boarded the aircraft, bound for Amsterdam, and arrested a 23-year-old Somali and a 24-year-old German citizen of Somali origin. A police spokesman told the German television channel N24 that the men wanted to carry out a 'holy war'. According to the police, the pair had been under observation for months. | Publication: <i>Guardian.co.uk</i> News story: Storming of plane Time of download: 1.30 pm Version: 3 | Terror suspects arrested at Cologne airport Two men under police surveillance for writing jihad suicide notes arrested on board KLM flight to Amsterdam Kate Connolly in Berlin guardian.co.uk Friday, September 26 2008 12:23 BST German police boarded a KLM flight at Cologne airport early this morning and arrested two men suspected of preparing a terrorist attack. Police refused to comment on whether the men, a 23-year-old Somali and a 24-year-old German-born German, were believed to have been planning an attack on the plane or in the Netherlands. They denied earlier reports that the plane had been stormed by special commando forces, but said they had been tracing the men for months. They were arrested after suicide notes were found in their Cologne flat saying they were acting in the name of Allah. Passengers were ordered to leave flight 1634 and asked to identify their luggage to check whether the two arrested men had bags with them. The plane took off an hour late and landed safely at Schiphol airport in Amsterdam. |
| What? | Arrest of two men | What? | Arrest of two men |
| When? | Today | When? | Early this morning |
| Who? | Commandos, terrorists | Who? | German police, terrorists |
| Where? | Cologne airport | Where? | Cologne airport |
| How? | Storming of a KLM airliner | How? | Boarding of a KLM airliner |
| Why? | Terrorists wanting to carry out holy war | Why? | Men writing jihad suicide notes |
| Sources? | A spokesperson from German police, German TV channel N24 | Sources? | German police, named expert talking to German TV channel N24 |
| User participation? | No | User participation? | No |

FIGURE 1

Two versions of the same news story: *Guardian.co.uk*. The two screen shots are copyright Guardian News & Media Ltd 2008.

| | | | |
|--|---|--|---|
| Publication: <i>Aftonbladet.se</i> News story: Storming of plane Time of download: 10.10 am Version: 1 | JUST NU: Tyska kommando-soldater stormar flygplan <small>* två misstänkta terrorister ska ha gripits</small> | Publication: <i>Aftonbladet.se</i> News story: Storming of plane Time of download: 10.50 am Version: 3 |  Specialstyrka stormade plan – två gripna <small>* FORT NU: Misstänkta terrorister greps på flygplats i Tyskland • Misstänkta till fångna efter flygning • HBTU var de mer än kändiserna? Her du biter eller söccolen?</small> |
| What? | Arrest of two men | What? | Arrest of two men |
| When? | | When? | 7 am |
| Who? | German commando soldier, two terrorists | Who? | German commando soldier, two terrorists |
| Where? | Cologne | Where? | Cologne airport |
| How? | Commandos storming plane | How? | Commandos storming KLM plane |
| Why? | | Why? | Suicide attack |
| Sources? | Sky News | Sources? | News channel N24 |
| User participation? | No | User participation? | Yes, asking for user contribution |


| | |
|--|--|
| Publication: <i>Aftonbladet.se</i> News story: Storming of plane Time of download: 1.30 pm Version: 7 |  Terrorismstänkta greps i Tyskland <small>* Flera stormade flygplan... två misstänkta terrorister greps • Misstänkta till fångna efter flygning • HBTU var de mer än kändiserna? Her du biter eller söccolen? • Är du orolig för att Sverige ska utlösas för terrorism? © N C NA • SE resultat</small> |
| What? | Arrest of two men |
| When? | 7 am |
| Who? | German police, two terrorists |
| Where? | Cologne airport |
| How? | Police storming airplane on front page. Commandos storming KLM plane in article headline. Police walking aboard plane in text |
| Why? | Suicide attack |
| Sources? | News channel N24 |
| User participation? | Yes: (1) asking for user contribution; (2) poll asking about readers fears of Sweden being a target of terrorism; (3) one user comment on the news story; (4) the ability to link user blog to the news story (none linked) |

FIGURE 2
 Three versions of the same news story: *Aftonbladet.se*

less dramatic story about the police walking aboard the plane to arrest men with suspicious notes in their apartment. In both cases the story's volume increased over time, as details and sources were added and removed. As the day proceeded, the story's news value appeared to decline, as it fell down on the front pages before finally disappearing.

Thus, it is apparent that the first versions were drafts of the final story rather than a full and verified news story. This example also suggests that depending on when users accessed the news sites on September 26, 2008, they were exposed to rather different versions of this event and its importance. Thus, in both cases the example illustrates the immediacy and liquidity of online news.

However, this example also illustrates several important differences between *Guardian.co.uk* and *Aftonbladet.se*. Most importantly, the news on *Aftonbladet.se* was characterized by a higher degree of immediacy and interactivity than the news on *Guardian.co.uk*. Whereas the first version of the story on *Guardian.co.uk* was rather complete in the sense that it answered the fundamental questions of journalism (notwithstanding that the answers to these questions changed), the first version on *Aftonbladet.se* only contained a few sentences. Furthermore, from the second version and onwards, *Aftonbladet.se* asked the users if they "were there" and had information or images or movies about the event. Hence, *Aftonbladet.se* actively invited users to contribute to the news story, consequently blurring the distinction between producers and consumers of online news. In a later version *Aftonbladet.se* also added a poll as well as an opportunity for users to post comments about or link their blogs to the news story. However, in the eighth and final version of the news story, users were no longer able to post comments or link their blogs to the story, while the poll and the invitation to submit pictures or movies remained on the news site. It can also be noted that *Aftonbladet.se* featured contradictory descriptions of the "how" and "why", even in the final version of the news story. On the front page it was claimed that German *police* "stormed" the plane, in the headline that "commandos"—understood as military—"stormed" the plane, and in the text that German police "entered" the airplane.

This news event did not generate any visible user contribution or produce any intense user activity. Nevertheless, the example illustrates how the news story changed over time and how *Aftonbladet.se* actively tried to involve their users in the production of the news story. The example also illustrates some differences between the coverage of the news story on *Guardian.co.uk* and *Aftonbladet.se* with respect to immediacy and interactivity. More specifically, in the case of this particular news story *Aftonbladet.se* displayed more immediacy as well as more interactivity than did *Guardian.co.uk*. However, the mere fact that both online newspapers published several versions of the news story clearly suggests the liquid nature of online news.

More importantly, however, this example suggests that one viable strategy for capturing the interactivity and immediacy of online news might be to select a limited number of news stories, follow them closely to track when their content or context changes, and then download screenshots and the full content manually before executing a systematic analysis of the different versions.

Shorter Time in the Spotlight

The second proposed strategy for freezing the flow of online news is to measure the pace with which news stories disappear from the top of the front pages or from the front

pages altogether. This strategy builds upon the notion that while websites do not have the same space limitations as traditional media do, some placements on a Web page are more attractive than others. In traditional formats, the media have to decide once per publication cycle which story should have the most attractive placement, but online, the order in which news stories are presented can be constantly rearranged. Hence, the pace with which online news media change what news stories are assigned the most important placement on the front page is one measurement of immediacy.

To study the pace with which online newspapers change what news stories are assigned the most important placements on front pages, a number of decisions are needed. First of all, “the most important placement” has to be defined. In this case, we operationalized this as the 14 news stories that were published at the top of the front page of *Guardian.co.uk*. To allow for comparison, this study also included the top 14 stories on *Aftonbladet.se*. Secondly, the unit of analysis has to be defined. In this case, the unit of analysis was single news stories, defined by whether the topic or main focus of the news story remained basically the same. More specifically, a news story was considered as being on the front page if it remained basically the same in terms of main focus or topic and belonged to the top 14 news stories on the front page. Consequently, a news story was defined as *not* being on the front page if (1) it disappeared from the front page, (2) no longer belonged to the top 14 news stories on the front page, or (3) was transformed into a link to another news story that belonged to the top 14 news stories on the front page.

Thirdly, the time period for the analysis has to be defined. In this study, the analysis began at midnight on October 15, 2008, and continued throughout October 16, 2008. Using WinHTTrack, we downloaded the front pages once every hour, to allow for analyses of how long the top 14 news stories at the beginning of the analysis remained on the front pages. The immediacy of online news was thus measured by the extent to which the news stories lost their original placements on the front pages.

A typical traditional newspaper would have all its content replaced only once every 24 hours. As illustrated by Figure 3, this is not the case in an online media environment.

Figure 3 shows for how long the top 14 news stories at midnight remained on the front pages of *Guardian.co.uk* and *Aftonbladet.se*, respectively. As can be seen, at 2 am—that is, only two hours after the analysis began—only four of the original top news stories remained on the front pages. At 1 pm, the last of the top news stories on *Aftonbladet.se* at midnight disappeared from its front page, whereas on *Guardian.co.uk*, the last top news story the preceding midnight had disappeared from the front page at 7 pm. Figure 3 also

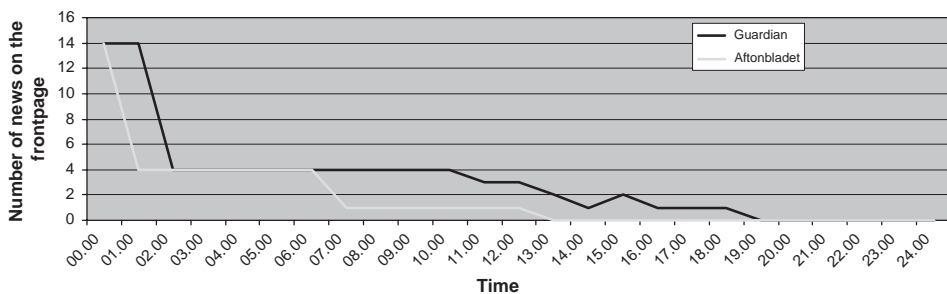


FIGURE 3

The dynamics of top news stories on *Guardian.co.uk* and *Aftonbladet.se*, October 15, 2008

shows that in the case of the *Guardian.co.uk*, one news story made a comeback on the front page between 2 and 3 pm, as it was updated with more information. This suggests a more dynamic news cycle at work with respect to online news as compared with news in traditional media.

Although there appears to be a period of inactivity in the middle of the night, at other times of the day news stories were continuously falling off the front page. This suggests that every news story online has its own publishing rhythm, and how long a particular news story remains on the front page may depend on whether it can be updated with new information or not.

More important in this context though, is that this example suggests a viable strategy for studying the immediacy of online news, as opposed to news in traditional media, and hence for research on the dynamics of online news agendas.

At the Top of the Agenda—but Not for Long

The third proposed strategy for freezing the flow of online news was to study how many top stories the online versions of newspapers have during one (or several) days. To study this, the first layer of the websites was downloaded every hour using the WinHTTrack software. Every news story that made the top spot on the front page on each of the online publications during the day under study was assigned a value based on its position among the top 14 news stories. The rationale for choosing the top 14 news stories was again that this was the number of top news stories on *Guardian.co.uk* at the time; hence, in other cases the number of news stories and the values assigned could be different without changing the underlying logic of this approach. It is important to note that while the number of news stories on the front pages varies over time, the top story should always be assigned the highest value, followed by the second-top story and so on, in order to capture the dynamics of the placement of different news stories.

In some cases, it is easier than in others to decide the placement of the news stories and hence the values assigned to each of the news stories. With respect to *Aftonbladet.se* there is only one news column, which makes the assigning of values a straightforward task. On *Guardian.co.uk* there are three different columns on the front page, before the special sections start. In such cases, each of the columns' importance in relation to the other columns has to be determined beforehand.

Thus, to test the third proposed strategy, the top news stories published on *Guardian.co.uk* and *Aftonbladet.se* anytime during the October 16, 2008 were assigned the value of 14 when they were at the top of the front page. As they moved on the front page they were assigned a value corresponding to their placement in relation to the other top-14 news stories. That is, if a news story dropped to the fifth place it was assigned the value of 10, if it dropped to place 14 it was assigned the value of 1, and so on. When another news story reached the top spot it was assigned the value 14, and its previous and subsequent movements were tracked. As the day proceeded this strategy allowed us to see not only how many and what news stories reached the most visible spot on the front page, but also to track their movements on the front page and for how long they stayed among the top-14 news stories.

The results of this analysis are displayed in Figures 4 and 5, for *Guardian.co.uk* and *Aftonbladet.se*, respectively, showing how the news stories that made the top spot at the front pages of the online newspapers moved during the day of October 16, 2008.

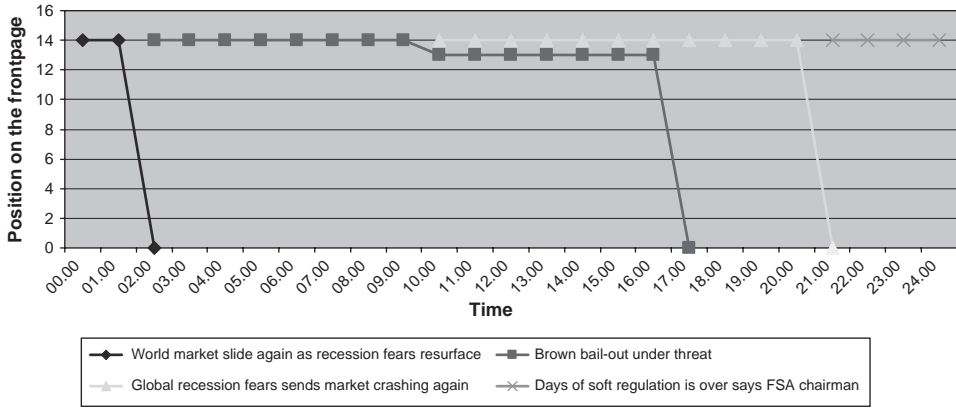


FIGURE 4
Changes at the top of the online news agenda: *Guardian.co.uk*

Figures 4 and 5 illustrate that both *Guardian.co.uk* and *Aftonbladet.se* had more than one top news story during the day, indicating immediacy. There are some notable differences between *Guardian.co.uk* and *Aftonbladet.se*, however. While *Guardian.co.uk* had four news stories at the top of its front page at different times of the day, *Aftonbladet.se* had 13 news stories at the top of its front page. Immediacy thus had a stronger impact on *Aftonbladet.se* than on *Guardian.co.uk*. Another difference is related to the topic of the news stories that reached the top spot of the front pages: in the case of *Guardian.co.uk*, all top news stories were about the global financial situation, whereas in the case of *Aftonbladet.se*, the top news stories covered a range of issues.

The figures also show that the only time throughout the 24-hour period when there was little movement was during the night. Apart from that, on *Aftonbladet.se* there was constant movement with respect to where the top news stories were published on the front page. Some remained at the top for a longer period of time, for example the “US

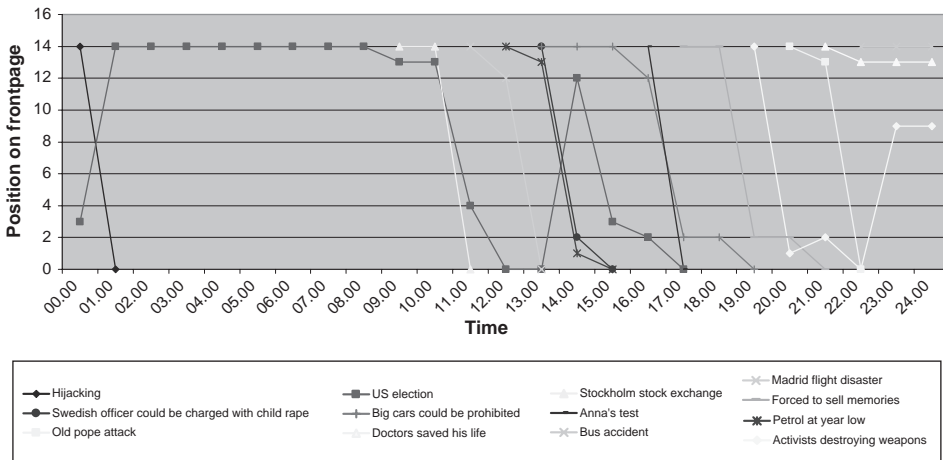


FIGURE 5
Changes at the top of the online news agenda: *Aftonbladet.se*

Downloaded By: [Mittuniversitetet] At: 13:51 25 January 2010

election”, whereas other news stories remained at the top for only a few hours, for example a story about the “Swedish officer accused of child rape”.

The general movement on both *Guardian.co.uk* and *Aftonbladet.se* was from the top of the front pages and downward. There were, however, some cases when news stories bounced back to the top of the front page after new information was added, for example the story about “activists destroying weapons” on *Aftonbladet.se*.

At the end of the day, on *Aftonbladet.se* three previous top news stories remained among the top-14 news stories. None of the news stories had been present on the front page for more than five hours. Accordingly, the top news stories of the previous night, morning, lunch and afternoon were all gone from the front page. The same was basically true with respect to *Guardian.co.uk*.

These results suggest that the news agendas of both *Guardian.co.uk* and *Aftonbladet.se* were influenced by immediacy, although more so in the latter than in the former case. More important, though, is that this example suggests a viable strategy for studying the immediacy of online news, and hence for research on the dynamics of online news agendas that take the special characteristics of online news into consideration.

Conclusion and Discussion

In the offline environment, news is presented in a linear sequence making it clear where one news story ends and another starts. When a news story is updated, this is articulated as either a new article in the newspaper or when a news anchor notifies that “we just received information about . . .” In an online environment, this is not necessarily the case, and several observers have noted that online news is characterized by interactivity, immediacy and liquidity. Research has also shown that on the news site-level of analysis, news is presented in a continuously changing nonlinear fashion, and modifications in news content or context are not necessarily highlighted.

However, there are still only a handful of studies on interactivity and immediacy at the news story-level of analysis. One of the major reasons for this appears to be that traditional research methods are not fully applicable in a setting where the news can change continuously. This poses serious challenges for any researcher who is dependent on analyzing the contents and contexts of news stories in media outlets where news stories are published and the interplay between producers and consumers of news take place.

Previous research, using familiar methods, have provided a rationale for studying online news, but has primarily been focused on the setting in which online news is erratically and co-creatively produced and consumed, hence leaving a blind spot with respect to the news story-level of analysis. This is problematic, as analyzing the content of online news stories is a necessary prerequisite for generating and testing theories regarding the essence of liquid journalism. Avoiding analyses of the content of online news stories or disregarding the special characteristics of online news on the news story-level of analysis, instead extrapolating how online news ought to unfold on the basis of the medium’s characteristic or journalists’ and citizens’ attitudes, can never be a viable strategy in a situation where more and more people turn their attention to the Internet in pursuit of information on societal matters.

In this study we have thus proposed three strategies for freezing the flow of online news, to allow for systematic research on interactivity and immediacy at the news

story-level of analysis. These strategies could also be used for other content analyses that wish to take the special characteristics of online news, as opposed to traditional news, into consideration. Although this is only an exploratory study and a first step in the pursuit of methods for content analyses of online news, we believe that it has shown that it is indeed possible to freeze the flow of online news, in order to enable systematic research on the interactivity and immediacy of online news on the news story-level. The results from this study may also benefit researchers committed to traditional content analysis, seeking ways to translate this method to an online environment.

While this study has suggested and tested three strategies for freezing the flow of online news in order to allow systematic analysis of interactivity and immediacy at the news story-level of analysis, it is admittedly limited in the sense that we have not tested the strategies in a setting that involves larger samples of online news stories over longer periods of time. It has furthermore not addressed the crucial question on how to find ideal points in time for the downloading of online news stories, or by which means the downloading should be done. Such questions thus need to be addressed in further research and efforts at finding ways to content analyze online news while taking the special, liquid, character of online news into consideration.

ACKNOWLEDGEMENTS

Michael Karlsson would like to thank the Swedish Civil Contingencies Agency for the grant that made his contribution and the research reported here possible.

NOTE

1. See www.pressgazette.co.uk/story.asp?sectioncode=1&storycode=42111&c=1 and <http://www.kiaindex.org/> (both accessed 16 October 2008).

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