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How Fast is Too Fast? Examining the Impact of Speed-Driven Journalism on News Production and Audience Reception

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How Fast is Too Fast? Examining the Impact of Speed-Driven Journalism on News Production and Audience Reception

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To my family, Huaiching, Yachu and Michael Lee, and in memory of Chocho Lee

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How Fast is Too Fast? Examining the Impact of Speed-Driven Journalism on News Production and Audience Reception

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New media technology is altering many aspects of mass communication processes. One of the most profound changes, especially in the newspaper industry, lies in the rise of speed-driven journalism, with growing emphasis on what is *new* or happening *now*. With more newspapers adopting this speed-driven news practice, the nature of its impact on journalists and audiences necessitates empirical examination, and this dissertation seeks to contribute to the professional and academic literature from a two-part, mixed method approach.

Through interviews with journalists, study 1 sought to understand journalists' view of how speed-driven journalism affects their professional norms, routines and output, and how social media factors into the speed-driven online media landscape. The interviewees were also asked to discuss their view on how speed-driven journalism affects news audiences in terms of news credibility, news use, and paying intent. Based on findings from study 1, an experiment on news audiences was conducted in study 2 to assess the impact of speed-driven journalism on news credibility, future use, paying intent, readability and selective scanning.

Key findings from both studies include: (1) Whereas most interviewees in study 1 believed that speed harms news credibility but boosts news use, the experiment in study 2 revealed that speed neither harms news credibility nor promotes future use. (2) Speed-driven journalism has no effect on selective scanning or audiences' paying intent. (3) In terms of readability, news stories presented in the live blog-like format are deemed harder to follow when compared to those presented in the traditional format.

This dissertation advances the hierarchy of influence model by uncovering the effect of *perceptual disconnect* on speed-driven news practices at the social institutions level. That is, journalists are wrong at times in their assessment of how audiences engage with and are affected by new media technology, but nonetheless proceed to produce news and content based upon their mistaken judgment.

Table of Contents

Chapter 1: Introduction

It is the best of times for journalism – more news information is produced today than ever before (Yglesias, 2013). It is the worst of times for the news industry – most news organizations continue suffering from economic hardship and more newsrooms are laying off journalists (The Pew Research Center's Project for Excellence in Journalism, 2013b). For better or worse, new media technology is altering many aspects of mass communication processes. One of the most profound changes, especially in the newspaper industry, lies in the rise of speed-driven journalism, with growing emphasis on what is *new* or happening *now* (Lewis & Cushion, 2009).

The drive for speed is nothing new in journalism. "News" by definition is information that is *new*. Traditionally, TV and radio news media have always been more speed-oriented than newspapers. Whereas most daily newspapers were published with a fixed periodicity or publication cycle (Tremayne, Weiss, & Alves, 2007) —special circumstances like the Kennedy Assassination aside—TV and radio news media operated under the 24/7 news cycle and were more invested in giving instant updates on new events. Implicit in the 24/7 news cycle is the promise that news *will* be delivered promptly—within minutes if not seconds of a breaking news event (Carr, 2013), and the 24/7 news cycle is increasingly being adopted by newspapers in their shift to speed-driven journalism online.

Newspapers have traditionally prided themselves in prioritizing in-depth analysis and thorough fact checking when compared to other news media, such as TV or radio, relying mostly on wire services for more speedy materials (Johnston & Forde, 2011). Nonetheless, the speed-driven nature of new media technology has significantly changed the way most newspapers conceptualize their role in the larger news media ecology, and

more newspapers are paying more attention to speed. For example, *The New York Times* updates its news website around the clock and disseminates breaking news alerts through its Twitter account. In sum, new media technology enables and encourages speedy news production and dissemination, and the newspaper industry as a whole is becoming *faster* in the attempt to measure up to different intermedia and intramedia competitors, such as TV, radio, and other newspapers, in the fight for scarce audience attention and to remain relevant online.

While responsible journalists continue doing their best to produce high-quality news and uphold traditional journalistic values such as accuracy, truthfulness and fairness (Christians, Ferré, & Fackler, 1993; Kovach & Rosenstiel, 2007; Society of Professional Journalists, 2012), speed is gaining traction as a new professional norm in the multi-media news industry. "Journalism has become continuous now. The faster you are, the more traffic you get, the more page views, the more money you can make. News breaks in many different areas as well. Journalism has changed. 'It's a hamster wheel now'" (Smith, 2012, para. 3).

The impact of speed-driven journalism is especially notable in the newspaper industry. Being the primary vehicle of quality journalism, daily newspapers are traditionally known for their employment of the largest reporting staff with most emphasis on in-depth coverage of important events compared to other news media such as radio and TV (Weaver, Beam, Brownlee, Voakes, & Wilhoit, 2007). In a time when most newspapers across the country continue to downsize their newsroom, the adoption of speed-driven journalism means that print journalists are asked to do more with less (Reinardy, 2010).

But how fast is *too* fast? This is the central question that this dissertation will explore—the first part of the dissertation will explore, through interviews with 11 print journalists, the extent to which speed-driven journalism affects news production and audiences in terms of news credibility, use and paying intent from journalists' perspective, and the second part will examine, using an experiment, whether or not speed-driven journalism affects audiences on news credibility, future use, paying intent, readability and selective scanning.

Not only is newspapers' shift to speed-driven journalism observable on most of their online platforms, but many newspapers also have extended their speed-driven practices to Twitter, taking advantage of its medium-specific attributes that facilitate and promote real-time communication (Klein, 2013). For example, The Tuscaloosa News tweeted minute-by-minute updates during a 2011 tornado and won a Pulitzer Prize for breaking news for tweeting (Luckie, 2012). News organizations and journalists around the world and across different media are using Twitter to distribute breaking news and other news alerts in a timely manner (Granier, 2008).

In short, Twitter has become an integral part of a majority of news organizations today. A content analysis finds that more than 90% of the content tweeted by news organizations links back to their own news sites (Holcomb, Gross, & Mitchell, 2011), turning Twitter into a platform for speedy publication and updates. With its speed-driven nature, Twitter is changing the way journalism is practiced. Because of its growing presence in the contemporary media landscape and its interconnectedness with speed-driven journalism, Twitter is also examined in this dissertation, and the purpose is to understand the role social media plays in speed-driven journalism.

There are a number of ways that the quest for speed changes journalism for the better. With instant publication only a blog post or tweet away for most journalists and news organizations online, there are now more opportunities for transparency in the newsgathering process. In the past, newsgathering processes were relatively unknown outside the newsroom, and all that the public had access to was whatever journalists were able to verify and put together before the deadline. In speed-driven journalism, however, journalists are encouraged to share with the world every twist and turn in a developing story. Such practice prompts journalists to share with audiences what they do *and* do not know, making the process of news production more democratic and transparent.

On the other hand, speed-driven journalism has the potential to do society and democratic political systems a disservice. For example, with the drive to constantly publish and to keep news current (Salcito, 2009), speed-driven journalism discourages investigative journalism, which takes more time to produce yet is vital in keeping the government and other powerful institutions in check (Bernstein & Woodward, 1974). Also, the quest for speed—to publish first and correct later, if necessary—leads to a greater chance for error, and news errors negatively affect news credibility and audiences' overall trust in the press (Maier, 2005).

As these examples suggest, the impact of the news industry's quest for speed on journalism is manifold. An empirical examination of its possible effects is needed to (1) help the news industry understand where speed-driven journalism is headed and (2) advance academic theorization on the relationship among technology, journalism and audience. This dissertation takes on these tasks and examines the ways in which speed-driven journalism affects news production and audience reception.

OVERVIEW

The first part of the dissertation entails interviews with working print journalists[1] following the grounded theory approach (Charmaz, 2006; Corbin & Strauss, 2008; Glaser, 2002). The aims of the interviews are to understand (1) the extent to which the quest for speedy publication and instant updates influences professional norms, routines and outputs, (2) the role of Twitter in pursuing speed, and (3) how journalists think speed affects audiences in terms of news credibility, use and paying intent.

The second part of the dissertation focuses on speed's effect on audiences using an experiment. Historically, research suggests that news editors and reporters alike have neither understood nor cared to understand their audiences' desires or preferences (Gans, 2004). However, the increase in audience control (Lee, 2013a)—the ability to choose what to consume—in the age of information surplus and the prevalence of audience metrics have not only pressured professionals but also given them the tools to better understand their audiences, leading to a surge of a new form of "audience gatekeeping" (Shoemaker, Johnson, Seo, & Wang, 2010), wherein audience preferences significantly influence editorial judgments (Lee, Lewis, & Powers, 2014). In order for the news industry to move forward, news professionals need to have a better understanding of their audiences. In particular, study 2 examines the extent to which speed-driven journalism influences audiences on news credibility, future use, paying intent, readability, selective scanning and article navigation.

This dissertation proceeds with a multi-part examination of the literature: (a) a review of extant professional and academic-professional literature on the cause and effect

[1] Print journalists are defined as those who are employed by a newspaper organization to work in either its print or online operation or both, but not those who work solely for an online organization.

of speed-driven journalism; (b) a theoretical grounding in the hierarchy of influence model (Shoemaker & Reese, 1996) with particular emphasis on the routines and social institutions levels; and an overview of literature on the antecedents and effects of (c) news credibility, (d) future use, (e) paying intent, (f) readability, (g) selective scanning and (h) article navigation.

Findings from the two studies will shed light on new ways to conceptualize the effects of speed-driven journalism and offer insights on the role of speed in media production and audience reception.

Chapter 2: Literature Review

SPEED-DRIVEN JOURNALISM

The drive for speed is deeply ingrained in journalism (Fisher, 2014). After all, what is news but information that is *new* to the public? Nevertheless, the rise of new media technology, such as satellite and cable television, online news sites, and portals, has heightened the news industry's obsession with speed in the contemporary media environment (Salcito, 2009). This has contributed to a new "fast news" culture online that encourages quicker, shorter and more shallow updates on facts at the expense of more substantive reporting or news analysis (Reinardy, 2010), with new focuses on highlighting "the 'newness of news' regardless of its drama or its significance" (Lewis & Cushion, 2009, p. 306).

While being accurate remains the top priority for most news organizations (Shapiro, Brin, Bédard-Brûlé, & Mychajlowycz, 2013), there is an increasing commercial incentive to be fast, or be the "first," because it attracts more eyeballs and leads to more online traffic, which in turn pleases advertisers and generates more online revenue (Lewis & Cushion, 2009; Nyhan, 2013). It has also been argued that some journalists opt for speed because there are minimal reputational and commercial penalties for errors in the contemporary media landscape (Nyhan, 2013). For example, CNN is often wrong in its breaking news coverage, but this has not stopped news audiences from turning to it for breaking news updates over the years (Carr, 2013; Oshiro, 2014). In fact, CNN's ratings nearly doubled in prime time earlier this year for its breaking news coverage of the missing Malaysia Airlines flight 370 (Carter, 2014).

CNN's commercial success during major breaking news events is, to a large extent, due to its signature speed-driven, around-the-clock updates in times of uncertainty. Its speed-driven approach to breaking news updates was recently lampooned by Saturday Night Live's production of a video that went viral online called the "CNN pregnancy test." In the video, a couple decided to use the CNN pregnancy test to find out whether or not the wife is pregnant. Instead of giving the couple a simple yes or no answer, it gave the couple constant breaking news alerts such as "CNN more confident than ever that it will soon know if you're pregnant," "search for pregnancy continues," and "pregnancy found" immediately followed by "cannot confirm pregnancy." The video concluded that CNN pregnancy test is "for when you want to know that they don't know." In short, the video mocks CNN's frantic coverage of Flight MH370, which gave the impression that it was broadcasting a plethora of updates seemingly for the sake of updates.

The CNN pregnancy test video speaks to an unmistakable trend in contemporary journalism. As Marc Fisher asserts in Columbia Journalism Review, "Increasingly… What's news is what's out there, whether or not it's been checked and verified," (2014, para. 7). Speaking to the impact of speed on contemporary news production, media critic Howard Kurtz, said the following during an interview while he was still at the *Washington Post:*

> "The pace has gotten dizzying for me and my colleagues just in the past few years… in the last year, the pendulum has swung in our newsroom to putting things on the Web almost immediately, with the exception of some big exclusive story or long investigative piece. You know, everybody wants it now-now-now. And that's understandable in a wired world. But the sacrifice clearly is in the extra phone calls and the chance to briefly reflect on the story that you're slapping together" (Rosenberg & Feldman, 2008, p. 139).

Critics have raised concerns regarding the adverse effect this speed-driven, fast-food, news diet has on the health of democracy (Silverman, 2007). After all, the prioritization of speed compels journalists to compromise on other aspects of journalism, such as in-depth reporting or thorough fact checking. For example, under pressure to publish as quickly as possible, one study finds that print journalists publish more speculations and less verified information or in-depth analysis (Lewis, Cushion, & Thomas, 2005). Moreover, as the pace intensifies, there is heightened pressure among journalists to cut corners in order to meet growing institutional demand with dwindling time and resources (Beaujon, 2013; Salcito, 2009; Stein, 2008). In such situations, journalists rely on fewer sources, be it citizen, senior institutional or political sources, and conduct less fact-checking (Reich & Godler, 2014).

There also are benefits to speed-driven journalism, however. For example, the ease of instant publication allows journalists to update and correct misinformation more quickly. Rather than waiting for corrections to be included in the next day's newspaper, most news organizations now update corrections around the clock. Also, news can now reach the public instantaneously through multiple channels, such as email, social networking sites and smartphone apps, which significantly widens its scope of reach. Moreover, as the byproduct of speed-driven journalism, journalists are encouraged to share with the world twists and turns in the newsgathering process via social media sites like Twitter. This practice encourages transparency among print journalists, which not only improves the relationship between journalists and audiences but also potentially holds journalists more accountable for their work (Martin, 2007).

Live blogging and rolling news are notable examples of the marriage between traditional journalism and the newspaper industry's quest to publish news as quickly as

possible. They differ from conventional news articles online in that they emphasize real-time, fact-based updates as events unfold at the expense of conventional inverted pyramid structure that prioritizes complete narratives in storytelling (Cushion, Aalberg, & Thomas, 2014; Stein, 2008; Thurman & Walters, 2013) and long-form journalism because it takes too long to produce (Singer, 2007).

Ethnographic and interview studies have long documented journalists' near-obsession with speed, in the form of scoops or exclusives, and some of the reasons for this obsession include their desire to beat the competition, vanity, and self-conceit (Beaujon, 2013; Domingo, 2008; Saltzis & Dickinson, 2008). The Internet has exacerbated the competition online (Fisher, 2014; Saltzis, 2012), and one of the byproducts of this phenomenon is that it makes everything faster. "We have entered a time when a writer's first idea is his best idea," said Scott Pelley, anchor and managing editor of CBS Evening News, "When the first thing a reporter hears is the first thing that she reports."

These speed-driven approaches to news reporting are increasingly becoming dominant ways in which major breaking news events are published online, but they remain "virtually non-existent" in existing academic research (Thurman & Walters, 2013, p. 86). To fill this void, the first task of this study is to understand the extent to which journalists see speed-driven journalism changing the way news is produced and assess the factors contributing to these changes. As such, the following research question is proposed:

RQ1: Do print journalists observe a rise of speed-driven journalism? If so, what kind of changes do they see? And what are the factors behind these changes?

While study 1 primarily focuses on journalists' perceptions of speed-driven journalism, it also asks about print journalists' perceptions of how speed-driven journalism affects audiences in terms of news credibility, use and paying intent. Integrating findings from study 1, the experiment in study 2 in turn tests the effect of speed on news credibility, use, paying intent, readability and selective scanning. Moreover, study 2 also explores how audiences navigate news stories that are presented in the live blog-like format. In the literature review, I will first discuss variables that are relevant to both studies—news credibility, use and paying intent—before discussing the hierarchy of influence model, which will contextualize and inform corresponding research questions and hypotheses. Then, I will discuss literature on readability, selective scanning and article navigation, which are additional variables examined in study 2.

NEWS CREDIBILITY

News credibility is the public's perception of a news organization's believability, and it is also called media credibility (Bucy, 2003). News credibility is a complex construct that has been studied using a variety of different operationalizations. For example, whereas Chung, Nam, and Stefanone (2012) measure credibility as a single-item variable (credible), Bucy (2003) measures it with five items (believable, fair, accurate, informative, and in-depth), and Meyer, Marchionni and Thorson (2010) measure it using six items (fair, unbiased, accurate, trust, reliance and believable). Moreover, rather than being a uni-dimensional construct, because of its conceptual richness news credibility has also been studied via a multi-dimensional approach

(Johnson & Kaye, 1998), meaning that the items are not used to create one but several indices as Cronbach's alpha only accounts for uni-dimensional constructs.

Disregarding all the different ways in which news credibility has been operationalized and examined in the literature, however, the core concept that most news credibility studies examine is the extent to which audiences, or users, perceive political or news information to be of credible or trustworthy quality (Bucy, 2003; Chung et al., 2012; Johnson & Kaye, 1998; Metzger, Flanagin, & Medders, 2010; Mitchelstein & Boczkowski, 2010), and it has been suggested that online and offline news sources share strikingly similar factor structures that underlie the extent to which information users believe the content to be credible (Sundar, 1999).

News credibility is a particularly crucial concept to study in the field of mass communication and journalism because it promotes news consumption, which in turn contributes to the healthy functioning of democratic political systems (Lee, 2013b). Studies suggest that the American public's perception of press accuracy has worsened over the years, which could be due in part to journalists' increasing need to produce speedy updates or constant publications. For example, Pew Research Center for the People and the Press (2009) finds that the public's perception of press accuracy significantly worsened over the past two decades—with fewer than one-third (29%) believing that the press "generally gets the facts right" in 2009, compared to 55% in 1985.

While speed does not necessarily *cause* more inaccurate reporting, reporting errors are more likely to occur when one is under time pressure (Kroll, 2013) or when news organizations adopt the "report first, confirm second and correct third" approach in the quest for speedy publication (Farhi, 2013, para. 13). Research finds journalistic errors

damage news organizations' credibility and negatively affect their fiscal health (Maier, 2005; P. Meyer, 2004; Porlezza, Maier, & Russ-Mohl, 2012; Silverman, 2007).

NEWS USE AND FUTURE USE

Dwindling audience has been a problem shared by most news organizations for more than a decade (Kohut, 2013), and the newspaper industry has been especially affected by the loss of newspaper readers, with more people spending less time with the news and fewer people reading the newspaper overall (The Pew Research Center's Project for Excellence in Journalism, 2013b). To understand why and how people use news media, a majority of news use studies have taken the uses and gratifications approach, which seeks to understand the ways in which different media fulfill different people's needs or gratifications (Blumler & Katz, 1974; Chyi & Lee, 2013; Emenyeonu, 1995; Krcmar & Strizhakova, 2009).

Uses and gratifications posits that audiences are more likely to repeatedly use a medium when their specific needs or desires are fulfilled (Blumler & Katz, 1974; Huang, 2009; Krcmar & Strizhakova, 2009; Lee, 2013a; Lin, 1993; Rubin & Perse, 1987; Ruggiero, 2000). Since one key driver of speed-driven journalism today is that news organizations believe audiences *expect* fast updates, it should thus lead to not only more news use, such as reading more frequently, but also more inclination to consume similar news updates, because it helps to meet contemporary audiences' growing need for instant gratification (Alsop, 2011).

From news organizations' perspective, news use is important because it's not only a way for them to measure the impact and reach of their content, but also its aggregate data, such as circulation or online traffic numbers, is often used by news organizations to negotiate business deals with advertisers. Because of technological advancement, news

use has been measured in different ways. In traditional media, use is often measured by circulation. In the online world, use is measured by audience data, which include unique visitors, page views, duration of use, etc.

For the purpose of this study, news use, which refers to the extent to which audiences read/watch/listen to news presented in the speed-driven format, is explored in the interviews, and the purpose is to understand whether journalists think speed encourages or discourages use by audiences. On the other hand, future news use, which is the likelihood that audiences would consider consuming similar news stories, is explored in the experiment with the goal of informing the news industry about the prospect of speed-driven journalism. After all, the future of speed-driven journalism may be gloomy if news audiences' experience with it does not encourage future use.

PAYING INTENT

With steady decline in print circulation and advertising revenue over the years (Sasseen, Olmstead, & Mitchell, 2013), most newspapers in the industry have been forced to experiment with different online subscription models to make up for losses from the print products (Jenner, 2011), rendering research on paying intent necessary and important. Despite continued growth in online news consumption over the last two decades (Sasseen et al., 2013), most newspapers still struggle to find a viable business model online (Rosenstiel, Jurkowitz, & Ji, 2012).

In general, charging for online content is difficult— research suggests that the public has weak paying intent for online news regardless of the payment model (Bleyen & Hove, 2007; Chyi, 2012). For example, a survey of nine countries finds that news consumers around the world are only willing to pay about $5 a month for news online, with the average being around $3 a month in the U.S. (The Boston Consulting Group,

2009). Additionally, close to 80% of global news consumers indicated in another international survey that they would no longer use a website if it were to charge them because most respondents believe that they can find the same information elsewhere at no cost (Covey, 2010).

This does not mean charging for news is a lost cause for newspapers; there are still success stories, such as *The Wall Street Journal* and *Financial Times,* in monetizing online news content, although such successes are clearly the exception rather than the norm (Herbert & Thurman, 2007). A recent report by the Pew Research Center's Project for Excellence in Journalism (2013a) finds that of 1,380 dailies in the U.S., 450, or about 33%, have adopted some form of digital paywall.

Taken together, these findings suggest that newspapers' challenge in monetizing online news content lies in finding new ways to create value and encourage paying intent among news consumers (Lee & Chyi, 2013). After all, whereas newspapers in the past have traditionally relied on advertising for revenue, recent industry figures and academic research suggest that newspapers do not generate enough profit from online advertising to remain sustainable, and hence charging for online content becomes one possible, albeit challenging, solution for newspapers to remain economically viable in today's media environment (Goyanes, 2014).

Consumer's paying intent, or willingness to pay, is often studied in economics and marketing, although there have been relatively few studies that focus particularly on news consumers' paying intent for online newspapers (Chyi & Lee, 2013; Chyi, 2012; Goyanes, 2014). Conceptually, paying intent translates into the maximum amount of money that a consumer is willing to pay for a product, and it is strongly influenced by market competition. For example, the more news information providers there are online

the less likely that consumers are willing to pay for news, especially in the age of information surplus where consumers have a plethora of news outlets to choose from for free (Chyi, 2009).

In a market with fierce competition, theory of monopolistic competition posits that the key to success is product differentiation (Chamberlin, 1950). For news organizations, this means they must aim for content differentiation in today's hyper-competitive media environment (Chyi & Sylvie, 1998). While "speedy updates" can certainly be a way to differentiate a news product from other "slower" ones, the Internet offers countless alternative venues for people to get fast updates for free, ranging from social media sites such as Facebook and Twitter to blogs and portals. Moreover, when speedy news content is produced at the expense of in-depth coverage or analysis, news may become a commodity that news consumers are less likely to pay for. After all, what the public needs is not more information—a majority of today's news consumers already feel overwhelmed by information overabundance (Holton & Chyi, 2012). Instead, what is more valuable is "curated information"— information that is explained and contextualized in a way that helps the public make sense of a new event (Friend & Singer, 2007).

HIERARCHY OF INFLUENCES MODEL

Used to examine key drivers that shape media content, the hierarchy of influences mdel was first introduced in the 1990's (Shoemaker & Reese, 1995), and it is an extension of the gatekeeping theory (White, 1950). Taking a media sociology approach, the hierarchy model considers influences on media content from a variety of levels -- rather than identifying a particular change agent, the model proposes that in order to understand the holistic picture, scholars should consider five influences on media content:

1) Individual. 2) Routines. 3) Organizational. 4) Social institutions (Extramedia). 5) Social systems (Ideological).

Visually, the hierarchy model has been presented in an onion-like graph. Implicit in these layers are different forces that shape content; however, the model does not suggest, for example, that the individual level is any less predictive than the ideological level just because it is situated in the innermost layer. In fact, the five levels are conceptualized in terms of their degree of abstraction in a sense. Depending on one's theoretical framework, it is often the case that some studies would take a bottom-up approach, which is from the individual level to the social systems level, while others may adopt a top-down approach, which is from the social systems level to the individual level. It is also commonplace that studies would focus specifically on only a few of the levels in the hierarchy model. This dissertation will focus specifically on the routines and social institutions (or extramedia) levels in exploring the effects of speed on news production and audience reception.

The hierarchy model is a helpful map that guides holistic examination of real-world connections *among* various factors specified in the model. In fact, its cross-level theoretical linkages are one of the model's fortes. One key thing about the model is that while it specifies five levels, they are actually not mutually exclusive. For example, although the role of audiences in the news-making process is more formally categorized in the social institutions level, the influence of audiences is also acknowledged in the routines level and others (Shoemaker & Reese, 2013). Nonetheless, for theoretical purposes, this study conceptualizes the effect of audiences at the social institutions level.

As aforementioned, study 1 will explore print journalists' perception of how speed-driven journalism has altered their work routines and how it may influence

audience reception. Adopting the hierarchy of influences model, the focus of this dissertation will thus be primarily at the routines and social institutions levels.

Routines level

The routines level of the Hierarchy Model focuses on the ways in which media workers do their job—it's about unwritten cues, rules, patterns and processes that guide routine media practices (Shoemaker & Reese, 2013). Routines are often the result of practical responses to a variety of organizational-specific needs, and the purpose is always to make media practices as efficient as possible, optimizing the relationship between media organizations and their environment. Routines give rise to norms that collectively define a media professional, and often change over time in conjunction with new technological, organizational or social advancements (Lowrey, 2006). To better understand how speed-driven journalism affects routine level news practices in the newspaper industry, the following research question is asked in the interview study. For the purpose of this study, professional norms and routines differ in their scope. Whereas professional norms refer to common journalistic practices at the organizational or even industry-wide level, routines refers more specifically to individual journalistic practices. On the other hand, output refers to work produced by the journalists:

> **RQ2:** How do print journalists see speed-driven journalism affecting their (a) professional norms, (b) routines, and (c) output?

While the demand for speed-driven journalism is prevalent in the newspaper industry, there are reasons to believe that different newspapers face different kinds of speed-driven pressure. Some professional literature suggests that local papers and papers in small markets in general experience less pressure to move online when compared to

metro papers, which delays, if not mitigates, these newspapers' pressure to pursue speed-driven journalism (Depp, 2013), although such finding necessitates further empirical evaluation. To offer one of the first empirical examinations of the extent to which speed-driven journalism affects news production at national, metropolitan and local newspapers, the following research question is asked in the interview study:

> **RQ3:** From print journalists' perspective, does speed-driven journalism affect news production at national, metropolitan and small local newspapers differently?

Social institutions level

In their updated book, Shoemaker and Reese (2013) renamed the extramedia level the "social institutions" level. The basic idea is the same—at the social institutional level, many factors such as government, technology, media watchdog groups, interest groups, sources, advertisers and audiences influence content creation. With the focus on audience reception, study 1 will focus specifically on print journalists' perception of how speed-driven journalism influences audiences. After all, as Shoemaker and Reese (2013) assert, influences on news production are often the result of the interaction between professional decision-makers and audience users.

In fact, empirical evidence suggests that newspapers are paying attention to audience desires in the contemporary media landscape (Lee et al., 2014) as print circulations continue to decline (Edmonds, Guskin, Rosenstiel, & Mitchell, 2012), which suggests that news makers' perception of how speed-driven journalism is received by their audiences will influence their subsequent news production. Specifically, the following research question is explored in the interview study. It should be noted that whereas study 1 explores print journalists' perception of the effect of speed-driven

journalism on audiences through interviews, study 2 examines the actual impact of speed-driven journalism on audiences using an experiment:

> **RQ4:** To what extent do print journalists believe speed-driven journalism influences audience reception in terms of (a) news credibility, (b) use, and (c) paying intent? (d) Are there any other concerns in regards to audiences?

TWITTER

Twitter is one of the fastest ways for news and information to spread online, and has often been used by the public and journalists alike to break news stories online. For example, when an airplane crashed on the Hudson River in 2009, a photo of the wreck was tweeted by a man on the rescue ferry shortly after it happened. In April 2013, the first report of the Boston Marathon bombing was tweeted at almost exactly the same moment that the first bomb went off. In addition, the Watertown shootout following the Boston Marathon bombing was covered in real-time by a Twitter user because it happened right outside of his apartment window (Shontell, 2013).

In addition to the public's journalistic use of Twitter, most major news organizations today, including *The Washington Post* and *The New York Times*, have embraced Twitter as an integral part of their online portfolio (Schulte, 2010). The Tuscaloosa News in Alabama won a Pulitzer Prize for breaking news because of their use of Twitter to provide minute-by-minute updates during a 2011 tornado. Aside from breaking news and scoops, a majority of news organizations also use Twitter as a way to promote original content on their own websites (Luckie, 2012).

Assessing news credibility on Twitter is complicated because, as a news platform, Twitter is filled with both authentic information from established news organizations and

re-tweets or even fabricated news information by third-party blogs and users (Schmierbach & Oeldorf-Hirsch, 2012). A study finds that users are generally poor judges of content credibility on Twitter, and most people rely on heuristic cues, such as a user name, when assessing news credibility on Twitter (Morris, Counts, Roseway, Hoff, & Schwarz, 2012). The complex nature of news credibility on Twitter has not thwarted users from seeking news on Twitter, however. According to a study by the Pew Research Center, over half of Twitter users (52%) get news on the site. Compared to other social networking sites, such as Facebook or Google+, Twitter is the most frequently used platform for news consumption among U.S. adults via a mobile device (Holcomb, Gottfried, & Mitchell, 2013), and its use for news consumption is growing (Sonderman, 2012). Nevertheless, the fact that most news content on Twitter is free makes it hard to assess the extent to which Twitter encourages paying intent among average news audiences, if at all, and empirical research is needed to begin solving this puzzle.

To explore the extent to which Twitter influences news production and audience reception from print journalists' perspective, the following research questions are asked. Whereas professional norms refer to common journalistic practices at the organizational or even industry-wide level, routines refer more specifically to individual journalistic practices. Also, output refers to work produced by the journalists.

RQ5: How does print journalists' use of Twitter influence their (a) professional norms, (b) routines, and (c) output in speed-driven journalism?

RQ6: To what extent do print journalists believe their Twitter use affects audience reception in terms of (a) news credibility, (b) use, and (c) paying intent?

Having presented all the research questions from Study 1 above, I will now present Study 2's hypotheses and research questions. As previously stated, study 2 tests the effects of speed-driven journalism on audiences in terms of news credibility, use, paying intent, readability and selective scanning via an experiment. It also explores how audiences navigate news stories presented in the live blog-like format. Two conditions, fast and slow, are created for the experiment to test the effect of speed—the "fast" group will read news stories that are published quickly but contain a few "corrections" to mimic typical live blog format of correcting mistakes, whereas the "slow" group will read news stories in the traditional format without errors. Because literature relevant to news credibility, use and paying intent has already been covered above, the three hypotheses below are presented with abridged summaries that explain the logic behind each hypothesis.

Because of the inherent tradeoff between speed and accuracy, coupled with the negative association between journalistic errors and news credibility (Maier, 2005; P. Meyer, 2004; Porlezza et al., 2012; Silverman, 2007), the following hypothesis is proposed regarding news credibility:

> **H1**: News audiences in the "fast" group will perceive news stories to be significantly less credible than those in the "slow" group.

One of the reasons that the news industry is becoming increasingly obsessed with speed is that it believes audiences demand instant updates, which means that speedy updates would fulfill the growing desire for instant gratification (Alsop, 2011), although the professional literature offers scant empirical evidence supporting this assumption. Because uses and gratifications posits that audiences are more likely to repeatedly use a

medium if it satisfies their various gratifications (Lee, 2013a), which translates into a higher propensity for future use, and adopting the abovementioned industry belief that fast news meets audiences' demand for speed, the following hypothesis is proposed:

> **H2:** News audiences in the "fast" group will be significantly more likely to consume more news stories than those in the "slow" group.

Despite its concern for social responsibility or democratic ideals, profit remains a top priority for most commercial news organizations. With persistent economic hardship in the news industry at large (Olmstead, Sasseen, Mitchell, & Rosenstiel, 2012), newspapers across the nation are doing everything they can to reduce expense and maximize profit. Although most news professionals assume that audiences desire or demand speedy news updates, the extent to which speed-driven journalism translates into more revenue opportunities has not been examined, and this study seeks to fill that empirical gap.

As mentioned before, while "speed" accounts for some aspects of content differentiation, the problem is that most, if not all, news organizations today compete online to offer speedy updates and the market for speed-driven journalism is, arguably, already beyond the saturation point. For example, within minutes of breaking news events like the Boston Marathon bombing, a simple search on Google would lead most online users to a plethora of the latest updates on the event at no cost. As such, speed alone no longer stands out from the audience's perspective, and this lack of product differentiation, from the aforementioned perspective of the theory of monopolistic competition (Chamberlin, 1950), is thus not likely to contribute to news organizations' dwindling revenue stream. On the other hand, speed is also not likely to discourage

audiences' paying intent because most speed-driven news updates, such as breaking news alerts, are already free. Putting this theory to test, the following hypothesis is proposed. It should be acknowledged that it is proposed as a null hypothesis; however, it is consistent with existing body of knowledge.

> **H3:** In terms of paying intent, news audiences in the "fast" group will *not* be significantly different from those in the "slow" group.

READABILITY

The experiment also examines readability of content presented in the speed-driven, live blog-like format. Readability refers to the ease of following or understanding something that one is reading, and is often studied in information science (Baker, 2010). Readability studies have been conducted across different media over the years, ranging from traditional paper medium (Tinker, 1965), online news websites (Abdullah & Wei, 2008; Al-Radaideh, Abu-Shanab, Hamam, & Abu-Salem, 2011) to e-readers (Baker, 2010), and scholars have focused on different aspects of readability, which include vocabulary and grammatical structures (Chall & Dale, 1995), font size (Bernard, Chaparro, Mills, & Halcomb, 2003), and best line length (Dyson & Haselgrove, 2001).

Traditionally, online content has often been deemed less readable when compared to print equivalents (Nielsen, 1998), but this is largely due to poor portability or the inability to underline or make notes in the margins of online content (O'Hara & Sellen, 1997). However, the creation of tablets and retina display technology in recent years has significantly improved the portability and clarity of reading devices (Kuhn, 2002).

Readability has been examined in a number of ways (Baker, 2010; Bernard et al., 2003; Dalecki, Lasorsa, & Lewis, 2009;). As many as 40 readability formulas have been

developed over the years (Graesser, McNamara, Louwerse, & Cai, 2004). The most common readability tests are the Flesch Reading Ease Score and the Flesch-Kincaid Grade Level. Both tests focus primarily on average sentence length and average number of syllables per word. Other measures of readability include tests that ask readers how easy and fast the text was read (Baker, 2010), which is what will be used in this study. Despite methodological differences, most readability tests seek to understand how easy it is for readers to follow or comprehend a text from different lenses (Oakland & Lane, 2004).

In its infancy, readability of speed-driven journalism has not been examined prior to this study. Nonetheless, given its popularity online, news presented in live blog-like format necessitates empirical readability assessment to help news professionals figure out the best way to deliver speedy content to their audiences. As the first empirical study to explore readability of news presented in the live blog-like format, the following research question is proposed:

> **RQ7**: Compared to news audiences in the slow group, do those in the fast group consider news articles presented in the live blog-like format easier or harder to follow?

SELECTIVE SCANNING

The amount of free news content available online has increased dramatically over the years. In order to keep up with available information on the Internet and avoid information overload, many people engage in selective scanning, which refers to audiences' reading more selectively, such as picking and choosing among a wide array of available information for consumption and skimming news articles by skipping lines or

paragraphs. In general, people selectively scan content for bits and pieces of information that they think are interesting or relevant (Astleitner & Leutner, 1995; Eveland & Dunwoody, 2001; Kosicki & McLeod, 1990; Liu, 2005).

In general, research finds selective scanning is more prevalent among Web than print users (Eveland & Dunwoody, 2002; Liu, 2005), and that it is harmful to learning because most people are not good at figuring out the best way to navigate information and optimize learning (Eveland, Cortese, Park, & Dunwoody, 2004). For example, selective scanning increases the likelihood that audiences miss important information in news articles (Eveland & Dunwoody, 2002; Eveland & McLeod, 1995; Tewksbury & Althaus, 2000). Some studies have measured selective scanning with two questions that asked about skimming and reading portions of stories. They have mostly been used to examine the effect of hypermedia, such as the use of hyperlinks, on selective scanning (Eveland et al., 2004; Eveland & Dunwoody, 2002). To build on this area of research in the context of speed-driven journalism, this study adopts the same definition for selective scanning.

In essence, research on selective scanning aims to understand the extent to which users consume—or skip—content presented in different fashion, such as with or without hyperlinks. No empirical study prior to this dissertation has examined how the speed-driven, live blog-like news format contributes to selective scanning. Thus, in the attempt to shed light on this puzzle, the following research question is proposed:

> **RQ8**: Is selective scanning more or less likely to occur among those in the fast group compared to those in the slow group?

ARTICLE NAVIGATION

Understanding people's reading behaviors, such as how they navigate online content, informs research on how best to design web content as to empower audiences in the digital environment (Liu, 2005). The Web allows audiences to easily choose how they want to navigate and consume content (Eveland & Dunwoody, 2002), and this flexibility is also found in the context of speed-driven journalism because content produced in the live blog-like format gives audiences the freedom to either read from top-down, which is from the most recent to the oldest updates, or bottom-up, which is from the oldest to the most recent updates.

The ways in which audiences engage with content has been found to influence factors such as recall and comprehension (Eveland et al., 2004), which are important building blocks contributing to healthy democracy because citizens need to be able to remember and understand what they learned from the news in order to make informed decisions. Because no empirical study has explored how news audiences engage with content presented in the live-blog format, the following research question is asked to contribute to this new line of research:

> **RQ9**: Do audiences in the fast group read the news from top-down, which is from the most recent to the oldest updates, or bottom-up, which is from the oldest to the most recent updates?

COVARIATES

Three variables likely are associated with key dependent variables in study 2, and will thus be included as covariates. (1) General news use is included as a covariate because one's general news consumption experience is likely to positively influence one's attitudes, such as perceived credibility, toward and consumption of other news (Hu & Sundar, 2010). (2) The extent to which news interests audiences positively influence both news use and paying intent (Chyi & Lee, 2013; Lee & Chyi, 2013). (3) Research suggests that one's past behavior is the best predictor of one's future behavior (Fishbein & Ajzen, 2010). In the context of online news consumption, this suggests that those who already pay for news online have a greater propensity to pay for speed-driven news content, or any news content.

Chapter 3: Method

STUDY 1: INTERVIEWS WITH JOURNALISTS

Study 1 entailed a set of semi-structured interviews with 11 working print journalists, and the goal was to understand their perceptions of how speed-driven journalism has affected news work and audience reception. Interviews are often used in mass communication and journalism research because they facilitate a rich understanding of the relationship between social actors and phenomena of interest to the researcher (Lindlof & Taylor, 2011). Three of the interviews were conducted in person, and the rest were conducted over the phone. Most interviews were about 45 minutes long, with the longest being 70 minutes long. All of the interviews were conducted between March 10 and March 22, 2014.

Interview Questions

The interview questions were informed by professional literature, and they include questions such as "Some say that the contemporary quest for speedy news updates and more frequent publications, or "speed-driven journalism," has changed the way journalism is practiced. Do you think that is true? What changes, if any, do you see?" and "How do you think your audiences like speed-driven journalism? Particularly, are they more likely to (a) believe news as credible? (b) Consume more news? (c) Be more willing to pay for the news?" Please see Appendix A for a list of all the interview questions. The interviewees were also encouraged to discuss whatever came to mind regarding the impact of speed-driven journalism on or around them, so the extent to which different topics were explored was dictated by the flow of each interview.

Profile of Interviewees

Four male and seven female journalists were interviewed for this study, and they constitute editors and reporters of different beats from a number of different national, Texas metropolitan and Texas local newspapers. The interviewees include a city editor, a desk editor, a bridge editor[2], two award-winning national correspondents, a politics, style and features reporter, a police beat and public safety reporter, two breaking news, crime and accidents reporters, and two award-winning investigative reporters. The interviewees hail from *The Washington Post, The New York Times, Austin American-Statesman, Dallas Morning News, Houston Chronicle, San Antonio Express-News, Denton Record-Chronicle, Lubbock Avalanche-Journal*, and *The Baytown Sun*. All of the interviewees expressed familiarity with speed-driven journalism.

Theoretical Sampling

The purpose of theoretical sampling is to maximize the chance of discovering variations among key concepts (Breckenridge & Jones, 2009; Corbin & Strauss, 2008). Because its goal is to understand how speed affects print journalists, this study focuses on journalists from newspapers of different sizes and coverage missions. Moreover, because newspapers in different geographic markets are likely to have different journalistic practices due to varied market competition (Chyi & Sylvie, 1998), this study focuses on Texas-based metropolitan and local newspapers. Being in the same state, these Texan papers were more convenient for the researcher to travel to and conduct in-person interviews whenever possible. Given this study focused on the relationship between

[2] Bridge editors are liaisons between the newsroom and a newspaper's shared services. For example, *Austin American-Statesman*'s A, B and sports sections are now done in West Palm Beach, Florida, and the bridge editor would facilitate editorial work and communication between those working in the West Palm Beach and Austin offices

speed and the print industry, all of the newspapers included in this study have an active online presence.

Grounded Theory

The grounded theory approach is known for enabling the development of existing and new theories (Barbour, 2007), and is thus fitting for this exploratory study on the effects of speed-driven journalism on print journalists.

The interviews were analyzed following the grounded theory approach, and the goal was to develop theory inductively *from* data rather than to form deductive hypotheses before interpreting the data (Corbin & Strauss, 2008; Glaser & Strauss, 1967; Glaser, 2005). Following this approach, no explicit hypotheses were formed during data analysis. Instead, special attention was paid to the ways in which print journalists discuss and describe how speed-driven journalism influences their work, their audiences and the print industry at large. All theoretical extrapolation and categorization were grounded in the data, with a focus on repeated patterns that may inform inductive theoretical development (Glaser, 2002). Unexpected findings were further probed to add theoretical depth and clarity via follow-up questions (Charmaz, 2006). During data analyses, all theoretical similarities and anomalies were noted with the aim to reach theoretical saturation. Back-and-forth analysis of the data and emerging categories was carried out until all core categories were identified from the data, reaching saturation point (Breckenridge & Jones, 2009).

At the conception of grounded theory, the primary goal is to let theory emerge from the data and to shun approaches that may hinder the data emergence process (Glaser & Strauss, 1978). In other words, it is about building new theories that are grounded in the data based on systematic data collection and analysis (Urquhart, Lehmann, & Myers,

2010). Glaser and Strauss, co-founders of grounded theory, have diverged in their approaches to grounded theory over the years, but at the core of both approaches is the importance of constant comparison between the data and emerging categories, which is one of the central methodological steps that this study adheres to. To take full advantage of the analytical richness that grounded theory offers, this study took on more of a Glaserian approach to grounded theory, which is rooted more in the classic approach to grounded theory when compared to that of the Straussian approach (Glaser, 1992). The goal was to allow new theories on speed-driven journalism to emerge freely from the richness of interview data.

STUDY 2: EXPERIMENT ON AUDIENCES

This study used a single factor— fast vs. slow—between-subject design, and the purpose is to examine the perceived effect of speed-driven journalism on news credibility, future use, paying intent, readability and selective scanning from the audience's perspective. This study also explores how audiences navigate news stories that are presented in the live blog-like format.

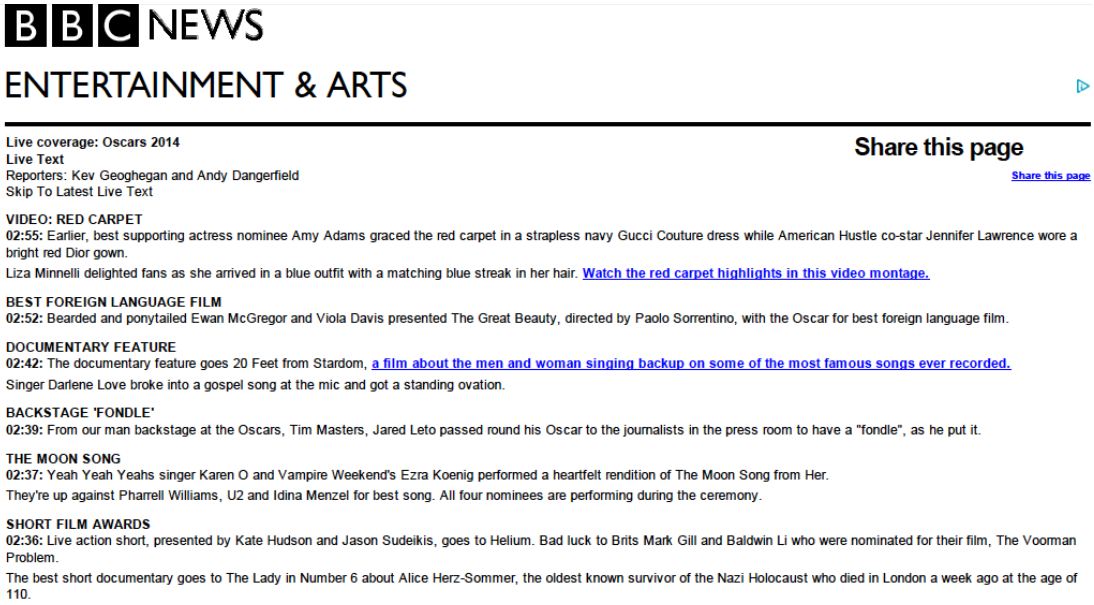
Participants

This experiment recruited its subjects from Amazon Mechanical Turk. MTurk is a crowd-sourcing platform that has recently gained traction in academia for general survey and experimental studies. Advantages of MTurk includes: it is cheap, easy to use for recruitment, and allows for completely voluntary participation (Jacquet, 2011). Two hundred and twenty adults (18+) residing in the U.S. were recruited for the study, and they were randomly assigned to either the fast or the slow group, with 110 subjects in each group.

Independent Variable

The independent variable in the experiment is operationalized at two levels: fast and slow. In the fast group, the subjects read all of the news stories in a live blog-like fashion where all of the events were published and updated with a clearly visible timestamp so as to mimic the urgency of real-time publication during breaking news events. Timeliness, or speed, is a central characteristic of live blogs (Thurman & Walters, 2013). The live blog format has gained traction online and is adopted by prominent online publications such as *The Washington Post,* BBC, *The New York Times,* Al Jazeera, and *The Guardian* (UK), etc. In general, real-time news updates on live blogs are presented in reverse chronological order, with fresher content at the top. See Figure 1 and 2 for examples.

Figure 1: Live Blog Example from BBC


BBC NEWS

ENTERTAINMENT & ARTS

Live coverage: Oscars 2014
Live Text
Reporters: Kev Geoghegan and Andy Dangerfield
Skip To Latest Live Text

Share this page
Share this page

VIDEO: RED CARPET
02:55: Earlier, best supporting actress nominee Amy Adams graced the red carpet in a strapless navy Gucci Couture dress while American Hustle co-star Jennifer Lawrence wore a bright red Dior gown.
Liza Minnelli delighted fans as she arrived in a blue outfit with a matching blue streak in her hair. Watch the red carpet highlights in this video montage.

BEST FOREIGN LANGUAGE FILM
02:52: Bearded and ponytailed Ewan McGregor and Viola Davis presented The Great Beauty, directed by Paolo Sorrentino, with the Oscar for best foreign language film.

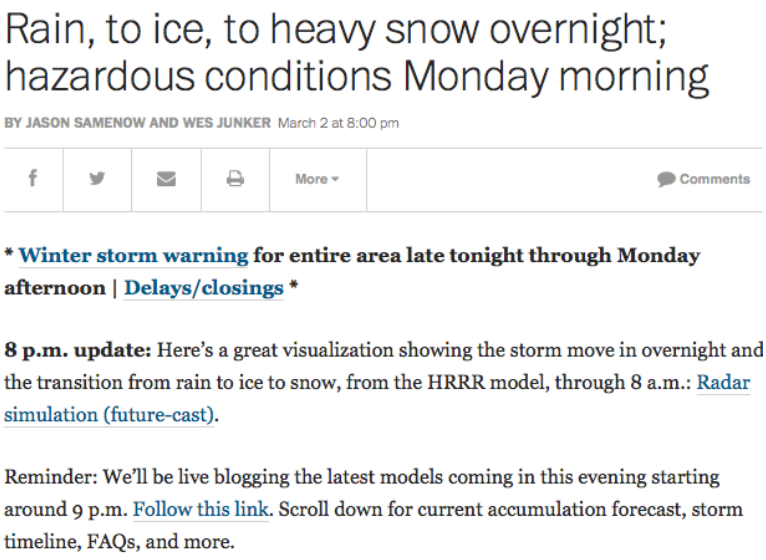
DOCUMENTARY FEATURE
02:42: The documentary feature goes 20 Feet from Stardom, a film about the men and woman singing backup on some of the most famous songs ever recorded.
Singer Darlene Love broke into a gospel song at the mic and got a standing ovation.

BACKSTAGE 'FONDLE'
02:39: From our man backstage at the Oscars, Tim Masters, Jared Leto passed round his Oscar to the journalists in the press room to have a "fondle", as he put it.

THE MOON SONG
02:37: Yeah Yeah Yeahs singer Karen O and Vampire Weekend's Ezra Koenig performed a heartfelt rendition of The Moon Song from Her.
They're up against Pharrell Williams, U2 and Idina Menzel for best song. All four nominees are performing during the ceremony.

SHORT FILM AWARDS
02:36: Live action short, presented by Kate Hudson and Jason Sudeikis, goes to Helium. Bad luck to Brits Mark Gill and Baldwin Li who were nominated for their film, The Voorman Problem.
The best short documentary goes to The Lady in Number 6 about Alice Herz-Sommer, the oldest known survivor of the Nazi Holocaust who died in London a week ago at the age of 110.

Figure 2: Live Blog Example From *The Washington Post*



Rain, to ice, to heavy snow overnight; hazardous conditions Monday morning

BY JASON SAMENOW AND WES JUNKER March 2 at 8:00 pm

More Comments

*** Winter storm warning for entire area late tonight through Monday afternoon | Delays/closings ***

8 p.m. update: Here's a great visualization showing the storm move in overnight and the transition from rain to ice to snow, from the HRRR model, through 8 a.m.: Radar simulation (future-cast).

Reminder: We'll be live blogging the latest models coming in this evening starting around 9 p.m. Follow this link. Scroll down for current accumulation forecast, storm timeline, FAQs, and more.

Experimental Conditions

There were two conditions in this study—fast and slow. News stories used in both conditions were identical except those in the "fast" condition were presented in the live blog format where each sentence was published with a timestamp to reflect the fast-paced nature of speedy updates, and a few "corrections" were also included to mimic typical live blog format of correcting mistakes (See below and Appendix B). News stories used in the experiment were adopted from publications such as *The New York Times*, except all factual information, such as location and names, were changed for the purpose of the study.

It should be acknowledged that the effect of speed on audience reception is likely to differ with different kind of news stories, such as hard news versus analysis. For the purpose and scope of the experiment, this study focused specifically on weather and

crime stories, as these two news topics are generally more subject to the influence of breaking news events. Examples of weather and crime stories include winter storms and school shootings.

Slow Condition

> **Dozens dead in San Antonio Flooding, Landslides**
> By NICHOLAS KULISH
>
> At least 60 people were killed and dozens injured in San Antonio after heavy rains caused flooding and landslides in Bexar County, officials said.
>
> Police spokesman Jon Hermes said hundreds more had been displaced because of damage to their homes. Willy Greenberg, spokesman for Mayor Art Martinez de Vera, said the damage is extensive.
>
> "Many houses in the suburbs were destroyed by the rain," Greenberg said. "Many of the victims are children, and the houses collapsed on them."
>
> Martinez de Vera said burials for the dead and treatment for the injured are being organized. Torrential rains began on Sunday night and continued into Monday morning, causing power failures and cutting off roadways near The Far Northwest.

Fast Condition

> **Dozens Dead in San Antonio Flooding, Landslides**
> By NICHOLAS KULISH
>
> **10:02 a.m.:** Torrential rains began on Sunday night and continued into Monday morning, causing power failures and cutting off roadways near The Far Northwest.
>
> **9:40 a.m**.: Mayor Martinez de Vera said burials for the dead and treatment for the injured are being organized.
>
> **9:28 a.m**.: "Many houses in the suburbs were destroyed by the rain," Greenberg said. "Many of the victims are children, and the houses collapsed on them."

9:23 a.m.: Police spokesman, Jon Hermes, said that hundreds more had been displaced because of damage to their homes. Willy Greenberg, spokesman for Mayor Art Martinez de Vera, said the damage is extensive.

9:17 a.m.: *Correction*—At least 60, not 100, people were killed.

9:12 a.m.: At least 100 people were killed and dozens injured in San Antonio, after heavy rains caused flooding and landslides in Bexar County, officials said.

Manipulation Check

A manipulation check is embedded in the experiment to ascertain whether speed is perceived differently in the fast and slow groups. The following question is used for the manipulation check: From your perspective, how fast was this news story published? (1 being "not at all" and 7 "very"). An independent sample t-test revealed that those in the fast group do perceive the news stories as having been published in a more speedy fashion when compared to those in the slow group (see Table 1), $t\ (202) = 4.78$, $p<.001$.

Dependent Variables

News credibility

Adopting from previous study (i.e., Chung et al., 2012), credibility is measured by the following question: From your perspective, how credible did you find this news story? (1 being "not at all" and 7 "very").

Future use

To measure future use, the following question is asked: From your perspective, how likely are you to read other stories like this one? (1 being "not at all" and 7 "very").

Paying intent

Adopting from previous study (Chyi & Lee, 2013), paying intent is measured by the following question: From your perspective, how likely are you to pay for this news story if it were behind a paywall? (1 being "not at all" and 7 "very").

Readability

Readability is measured by the following question: (1) From your perspective, how easy was this story to follow? (1 being "not at all" and 7 "very") (Baker, 2010).

Selective scanning

This study measured selective scanning with the following item: "How much of this news story did you read?" This variable is measured on a 7-point Likert scale, with 1 approximating "a few sentences," 4 "about half," and 7 "the entire article" (Eveland et al., 2004; Eveland & Dunwoody, 2002).

Article navigation

This variable is measured by the following question: Did you read this story top-down (i.e., from the latest update to the first update) or bottom-up (i.e., from the first update to the latest update)? (1) Top-down. (2) Bottom-up.

Covariates

Three variables are included in this study as covariates: (1) News interest is measured by the following question: How interesting did you find this news story? (1 being "not at all" and 7 "very"). (2) General news use: How often do you read the news in general? (1 being "never" and 7 " all the time"). (3) News payment: Are you currently

paying for any news online (i.e., pay-per-article, online subscription or print/digital bundle)? (1 = yes, 2 = no).

Demographic Variables

For descriptive purposes, standard demographic variables are collected at the end of the experiment, including gender, age, race, and education.

Procedure

The subjects were invited to participate in the study on MTurk. Those who were interested in the study clicked on the link to the survey hosted on Qualtrics. After reading the consent form and agreeing to participate, the subjects were then randomly assigned to either the fast or the slow group. Because this study used a between-subject design, all of the subjects read the same four news stories. The order in which the four stories appeared is randomized by Qualtrics, and Appendix B showcases all the news stories used in the experiment. After each news story, the subjects were asked to answer question 1 through 5 in Appendix C on news credibility, future use, paying intent, readability and selective scanning. Also, those in the fast group answered a question about article navigation. Demographic and general news use information were collected at the end of the survey. Then, the subjects were lead to a "thank you page" where they were debriefed about the nature of the experiment and informed that all the stories were created for the purpose of the experiment and none was about real events.

Statistical Analysis

Given the design of this experiment, with continuous dependent variables (news credibility, future use, paying intent, readability and article navigation), a nominal independent variable (fast vs. slow), and three continuous covariates, all of the analyses

were done using Multivariate Analysis of Covariates (MANCOVA). Descriptive statistics were used to answer the last research question on article navigation.

Chapter 4: Results

STUDY 1: INTERVIEWS WITH JOURNALISTS

Study 1 seeks to understand the effect of speed-driven journalism from journalists' perspectives. Eleven working journalists from different newspapers were interviewed, and most interviews were about 45 minutes long, with three conducted in person and the rest over the phone. From a range of national, metropolitan and local newspapers, interviewees included national correspondents, investigative reporters, those covering breaking news, crime, politics, public safety, and style, as well as bridge, city and desk editors. Bridge editors are liaisons between the newsroom and a newspaper's shared services. For example, *Austin American-Statesman*'s A, B and sports sections are now done in West Palm Beach, Florida, and an bridge editor would facilitate editorial work and communication between those working in the West Palm Beach and Austin offices. All of the interviewees expressed familiarity with the issue of speed-driven journalism. All except but one have a Twitter account.

The purpose of this study is to understand how print journalists see speed-driven journalism affecting news production and audience reception. Drawing on the grounded theory approach (Charmaz, 2006; Glaser & Strauss, 1978; Glaser, 2002; Walker & Myrick, 2006), the findings are based on the ways in which different patterns emerged from the data—including themes that were repeated by interviewees and those that were peculiar or unexpected. The goal is to allow new theories on speed-driven journalism to emerge freely from the richness of interview data.

Rise of speed-driven journalism in the print industry

RQ1 asks whether print journalists observe the rise of speed-driven journalism, what kind of changes they see, and what factors they think contributed to these changes. While journalism has always been a fast paced profession, all of the interviewees have seen an increased emphasis on speedy updates and constant publication in the past few years. Most interviewees believed they are being asked to publish at a faster pace and on more platforms, such as web, blog, social media and in print, in order to keep up with the fast-evolving media environment:

> "There has always been a need to write things quickly. A lot of what's changing is the need to put something up right away, that this intervening, this buffer of editors, copy editors and production that served to catch problems, when you're writing fast, has shrunk tremendously," said Interviewee 1.

Echoing Interviewee 1's view, Interviewee 5 made the following observation, "We've certainly moved to a more online-first model. The goal there is as soon as you hear something, verify it, put it online, push it out through social media. Do whatever you can so that readers see your story first and will likely follow it to its conclusion." Similarly, "My best example [of speed-driven journalism] would be when I worked at Time magazine. When I got there in 1994, it was a magazine. We had one deadline a week, and by the time I left in 2010 I was blogging, I was filing for the Web, and there was a certain immediacy to it," said Interviewee 2.

To give a more specific example of the rise of speed-driven journalism in the news production process, Interviewee 8 commented,

> "Let's say I go out to a scene… as soon as I get any basic information I'm probably emailing it in just from my phone to an editor who's going to post online while I'm still out there. Just to get it online as quickly as possible. Then if I get more information I'll keep sending more, just emailing it or texting it in even just from my phone so that they can keep updating the web version. Then maybe

> when I get back to the office I'll go back into that file that's already been established and maybe sort of flesh it out, maybe add more details, add some color, whereas I think in the old days if you went out to a crime scene you would get all your notes, you would talk to whoever you need to talk to, and then you would come back to the office and write. That doesn't work nowadays because they want things online pretty much as you find them out."

In short, the rise of speed-driven journalism "*accelerated* what was already one of the norms in the industry, because it's always been true that print reporters have wanted to be the first reporter to break any given story," said Interviewee 3.

Not only are journalists asked to publish more quickly, but they are also being asked to do more than they used to in trying to keep up with all other news information outlets online. For example, "Writers are now expected to tweet and blog and write stories and occasionally shoot videos," said Interviewee 4. For many journalists, the rise of speed-driven journalism is not only physically demanding—having to produce more products on more platforms with less time and resources—but also psychologically taxing. As Interviewee 5 explained,

> "There is such pressure to get [news] up online really quickly [that] you'll have an editor over your shoulder reading it while you type it. The second they say 'yes,' you have to hit publish. I think it's a very stressful environment. You think about all the things that could go wrong with what you're putting on. Even though you're right, you still are kind of hesitant because of how rushed you are to throw it out there."

Nonetheless, despite all the speed-driven pressure, some journalists also see speed-driven journalism as an opportunity to practice more immediate and expansive reporting that benefits society:

> "We both have the ability now to report immediately breaking news on the Internet, on our websites and even post videos, audio and everyone's used to that. At the same time, we also have the ability to do investigative reporting very quickly that in the past would have taken a long time. We can access public records, vast archives. We can do data crunching. We can mine Twitter, social

> media for eyewitness accounts… The amount of reporting I can do in a single day now is so far beyond what I could do when I first started my career twenty-some years ago because there was absolutely no way to talk to so many people instantaneously or consult so many records instantaneously as there is now," said Interviewee 7.

What contributes to speed-driven journalism?

Given the prevalence of speed-driven journalism in the print industry, the interviewees were asked to discuss their view on what contributed to the rise of speed-driven journalism. Synthesizing all the interview findings, this study finds that the following three reasons are the most prevalent:

Technological advancement

Many interviewees cited technological advancement, particularly the Internet, as a reason for the rise of speed-driven journalism. "We get faster because technology allows us to get faster to tell someone the way to go. The Internet—email came first and list serves, newsgroups. Now we have social media. We're just in the evolution of journalism. We're always getting faster," said Interviewee 7. Aside from the Internet, the rise of cable news and the "24-hour news coverage of everything all around the world, " said Interviewee 7, also contributed to the rise of speed-driven journalism.

> "I think [speed-driven journalism] started with cable, the fact that there was something that was going to be on all day long. I think that the trend was exacerbated by the ability to get stuff up through the Internet, that each new technology makes it possible to do things faster so we expect to get things faster," said Interviewee 1.

Journalistic belief in audience demand shift

Nearly all of the interviewees spoke of a perceived shift in audiences' demand, or expectation, in favor of speedy updates as a reason for the rise of speed-driven journalism. In Interviewee 3's words, "Consumers have, because of technology, changed

the way that they want to consume printed news. And therefore we have to speed up to keep up with that demand." Elaborating on this perceived shift in audience demand, Interviewee 11 commented, "We're curious people, and we are used to getting everything now. We're used to getting satisfaction now." Supplementing this view, Interviewee 8 remarked, "I think readers or consumers now sort of have come to expect that they can get things really quickly."

Interviewee 6 gave the following example:

> "Our audiences is demanding [speedy updates] in the sense that… when it's something they're interested in they're certainly going to the places where they can get the newest news, and if they come to the *Dallas Morning News* and we're behind, then they go someplace else. They don't stay around at the *Dallas Morning News*, and they're probably, and I haven't seen any research on this by our research staff, but we certainly all believe that that makes them less likely to come here first, it certainly intuitively seems like… For those of us who work here, we know that when there's a site that's usually behind, that's not the first place we go for news anymore."

Ironically, despite this prevalent belief among the interviewees, when pressed for how they know audiences "want" or "demand" things fast, most interviewees had little, if any, knowledge of empirical evidence backing this popular belief. For example, Interviewee 8 remarked,

> "I don't really know how you know [speed-driven journalism] is what readers want. I'm sure our business side does consumer surveys or something, but I've never seen those. It's just sort of an accepted fact at this point among reporters that readers want to know information as quickly as possible, and it's our job to get it to them."

Similarly, in response to my question, "I think most of the journalists I have talked to mentioned that the audiences expect speed and want things to be fast. So how do we know that they want that? Is it based on audience metrics?" Interviewee 1 noted,

> "I have no idea. It's not my department. I accept it, but I don't know if it's true. But I do know that, again, that the *Times* thinks it's important to be out there fast because audience is looking to find something on its phone right away when something happens, to get that news alert, to read that story. Is there marketing that proves this is true? I don't know."

In other words, while most of the interviewees believe that contemporary audiences' demand for speedy updates is a factor contributing to the rise of speed-driven journalism, which in turn directly affects their news production practices, this popular belief is actually an "unverified reality" for many. This calls for more direct, empirical audience research on the extent to which audiences actually demand for speed from print journalists or not, or at least better communication between those working in newspapers' audience research departments and journalists on the front lines.

Competition for scarce audience attention

Coupled with technological advancement and shift in audience demand, the fact that competition is fiercer online is also believed by many interviewees to have contributed to the rise of speed-driven journalism. "Everybody is your competition now," said Interviewee 2, and every news organization is doing everything it can to fight each other and social media for scarce audience attention, added Interviewee 10. No longer are there distinct markets for different news industries – the Internet has created an even playing field for all information providers to fight for scarce audience attention, and sometimes this fight revolves around news organizations' desire to excel on short-term metrics, such as to maximize online traffic and page views, said Interviewee 9. Illustrative of how the fierce competition online contributes to the rise of speed-driven journalism, Interviewee 6 remarked,

> "When we write about [a NFL football team], we're competing with local TV, local ESPN, radio, other local sports radio, ESPN nationally, most major newspapers, Sports Illustrated. Our local readers, good for them, have the option

> to get their news from any of those places. So that certainly speed becomes one of the things that we feel like we really need to have the newest news as soon as we can."

This fight for audience attention is not entirely based on monetary concerns; however. As Interviewee 4 explained,

> "We feel that it's really important to compete because we feel a duty… most of us are not in this business to get rich. If we were we'd be in another business. We are in this business because we think it's important to communicate good information. There's not only the competition of speed, and you wanting to win that competition, but there is an urgency about getting good information out, because there's so much bad information out."

It should be noted; however, that while the newspaper industry as a whole is facing fiercer competition online for scarce audience attention, not all news genres, or beats, are equally competitive. "Breaking news is particularly competitive online," said Interviewee 2. Expanding on Interviewee 2's view, Interviewee 8 found breaking news and crime to be particularly competitive beats "because all of TV news stations also cover it," and TV is an innately fast-paced news medium. On the other hand, Interviewee 3 believed that politics and national news are also highly competitive because whenever one news organization begins owning a particularly story and has access to some sources, it "has the ability to draw readers from all over the world to [its] site… [which] makes the competition fiercer."

Perceived effects on news production

How does speed-driven journalism affect professional norms, routines and output, asks **RQ2**? Because of this drive for speed, many newspapers are cutting back on longer pieces and are instead opting for quick updates with shorter paragraphs, said Interviewee 9. After all, with the need to publish more frequently, journalists simply have "less time on the longer pieces," said Interviewee 6. In the attempt to remain competitive online and

to not seem "behind" on news updates, some newspapers, like *The Austin American-Statesman*, would post findings from other organizations if they have not had a chance to verify their own information. For example, rather than publishing an original report, they may say "so and so has reported this or that."

The goal of this practice—giving audiences unverified updates from other news organizations—is to give audiences all the newest information possible without jeopardizing the credibility of one's own news organization because even if the new updates turn out to be wrong, the fault is on the original source who published the speedy update. As Interviewee 4 explained,

> "We're trying to make it so that people can still get the information, but that they know the source, and if the source is Orangebloods.com and not us, then they know that we don't have it verified yet. We're just telling them,'hey, Orangebloods has this, so maybe you can come here and find out…' In telling people where we got it from, we hope that that helps our credibility all around."

Another way that some other newspapers have dealt with this need to remain competitive online is by publishing speedy updates on the newspaper blog instead of the newspaper website or in print. Given the nature of blog is more informal and transient than that of a newspaper website or print newspaper, posting on the blog allows reporters to publish quickly and with less constraints, such as without having to go through the editor and the whole production team, said Interviewee 5.

Some of the interviewees believed that audiences have different expectations on how accurate news stories should be on the web versus in print, "I think there's that idea of having stories updated online, there's leeway for error. Not so much when you're printing something wrong… once it goes on to the print, I think you are obligated to have the most accurate story possible… from my perspective, the story in the paper is the finished product," said Interviewee 10. Aside from these two major approaches to

producing speed-driven news content, other interviewees saw increases in the amount of news alerts, live tweeting, and follow-ups online when breaking events unfold.

Not all newspapers embrace the "speed first" mentality. Newspapers such as *The New York Times* and *Dallas Morning News* reinforce the organizational belief that they would rather "be second than be wrong." To explain this philosophy, Interviewee 1 drew on a NASA analogy,

> "Nobody remembers if you got a delay. Nobody remembers the day you launched, but everybody remembers if you had an accident. So let's not be so focused on deadline that we kill seven people… Journalism doesn't kill people, but that same sense that it's better to get it right, because you don't want to lose that reputation, you don't want to lose that credibility."

Most interviewees did not mean to suggest that speed necessarily *causes* poorer news quality. In fact, all of the interviewees spoke of the importance of upholding quality despite the rush to publish quickly. Nonetheless, "there is a greater capacity for errors when you're moving fast," said Interviewee 2. Interviewee 9 gave the following cautionary example of how sometimes even good reporters make mistakes when they are under heightened time pressure to publish quickly,

> "*The Star-Telegram* got into hot water recently from a blog. They did a story on people who had lost their health insurance because of Obamacare. The reporter who did it… is a really good investigative reporter. She's a quality reporter. The editor who edited the story is a good editor. I've worked with him. They're both very good journalists but they turned the story around in a day and a half. There were serious holes in it that they got caught at it… I think they wanted to get the story done and they wanted to get it quickly. They didn't have staff to devote to doing it right. They just threw it together and then it came back to bite them. They didn't do the kind of detail work to do stories accurately. I think that was one of those drive to get it fast even if the quality suffers."

Perceived effects by national, metropolitan and local newspapers

Granted, national, metropolitan and small local newspapers are likely affected by speed-driven journalism differently, and **RQ3** explores such differences. Interview findings from this study suggest that small local newspapers are behind on speed-driven endeavors when compared to national or metropolitan papers. "This paper and community newspapers—I'm just going to use my paper that I work for as an example for a community newspaper—is behind. They don't consider social media important, at all. They say they do, but then I'll ask to do stuff and they don't… It just goes like, 'oh okay,' and then they put it on the back burner," said Interviewee 11. When asked why, she explained it has to do with community newspapers' traditional approach to news—the belief that audiences will come to news rather than the other way around. "I think it has to do with being old school. Thinking that people are always going to need the news," said Interviewee 11.

Another factor is that community newspapers are often severely understaffed, and thus have no competitive edge over relatively large news stations covering the same area when it comes to speed. "We only have two writers, a managing editor, a sports editor, a photographer and myself. That's it. When it comes to KHOU, which is a huge news station that covers Houston… of course they're going to get stuff first," said Interviewee 11. Instead of focusing on speed, a battle that small community newspapers is unlikely to win, many small newspapers like *The Baytown Sun* focus instead on making connections with the community to differentiate themselves from larger news organizations that may have more resources to compete in the battle of online speed-driven journalism.

Perceived effects on audience reception

Aside from discussing the perceived effect of speed-driven journalism on news production, interviewees were also asked to talk about how speed-driven journalism affect audiences in terms of news credibility, use and paying intent, etc. (**RQ4**). Most interviewees believed that speed deteriorates news credibility from the audience's perspective because "being first" often—though not always—comes at the price of being wrong:

> "I think there are plenty of examples that are pretty famous of people trying to be first and messing it up, getting their facts wrong, which I am extremely wary of. Just because if you don't have credibility, you don't have anything really in this job… As much pressure as there is to be first, I think even before that, you want to be right," said Interviewee 8.

In discussing the relationship between speed and news credibility, Interviewee 11 gave the following example:

> "CNN has botched so many things lately because they're trying to be first. In the end, it's better to be right than first. Because when you're first, and you get it totally wrong, you're going to get called out on it, and it's really hard. For example, the next time something big happens someone's going to be like, "yeah, but remember last time when CNN said this and it was wrong?"

While speed is generally seen as having a detrimental effect on news credibility, Interviewee 7 spoke of that intricate relationship between the two:

> "[Speed] is a double-edged type of sword. Certainly, it is easier to make a mistake because for example, you may be fooled by inaccurate information. You may fail to verify and all those kinds of things or you may be pushed by a competitive situation to run something without doing as much verification as you normally would do, but [it's also] absolutely true that you are much more able to correct errors in real time. Readers are able to participate in the news gathering process by providing instantaneous feedback and instantaneous questions. The ability to do crowd-sourcing and crowd-driven reporting in investigations is incredibly enhanced... We're always going to make mistakes. We're always just writing the

> first draft of history. We are able to move quickly to revise those drafts. We are able to more quickly correct errors. We do have enhanced abilities to report."

In a way, Interviewee 7's comment reflected Interviewee 1's view that speed and quality are not necessarily in conflict, although organizational influence seems to have a notable impact on whether speed enhances or hinders news credibility in the news production process. Whereas some news organizations would rather "be second but right," other news organizations prioritize "being first" at the expense of accuracy. For example, Interviewee 9 spoke of her experience working for Gannett,

> "Gannett wants it first no matter what. They don't care if it's wrong. We're first with it. If we got a thousand hits online that's great. We really don't care if it's right or wrong. What that does in the long run is undermine the credibility of your product so people are going to stop believing what you say."

While most interviewees believed that speed has an adverse effect on audiences' perception of news credibility, they also believed that it leads to more news consumption among average audiences. For example, clicks and page views show that more people are consuming news content today than ever before, said Interviewee 3. Part of the reason speed contributes to more news consumption is that it leads to more frequent publication—instead of having one written story on an event in the newspaper, the same event may now be reported in several chunks, using different multimedia features, and on more platforms. "I think people are consuming far more news now than ever, just because there's so much available," said Interviewee 4.

Nonetheless, many interviewers are concerned that speed may turn audiences *away* from the news is if inaccuracy becomes a byproduct in the newsmaking process. As Interviewee 5 noted, "if you are wrong, [audiences] will probably go someplace else to look for their news, or that will turn them off from going to you for breaking information

because who knows, you probably got it wrong again." In other words, while having speedy updates may draw audiences to a news website, accuracy remains an *a priori* requirement that news organizations should not overlook. After all, even if speed-driven journalism does generate short-term traffic by satisfying news audiences' innate curiosity, if speedy updates were to come at the expense of compromised news quality, it is more likely to damage news organizations' credibility and drive audiences *away* in the long run.

> "If you lose the trust of the community and I think there are a number of papers out there that are doing that now, then you've lost everything. [Audiences] are not going to follow you. They're not going to look on your website because they don't' trust you to tell them what's going on," said Interviewee 9.

As Interviewee 8 put it, "If you don't have credibility, you don't have anything, really, in this job."

In terms of speed-driven journalism's perceived effect on audiences' paying intent, most interviewees did not believe that speed is unique or valuable enough for people to want to pay. "I think that there's already been an expectation created that news should be free. People feel like it's a commodity that they do not have to pay for… The expectation is already that it will be up to date, fast, and comprehensive, but also free," said Interviewee 3. In other words, while speedy updates may encourage news consumption, speed is already an *expected* part of the news package that audiences are unlikely to be willing to pay a premium for. Instead, the interviewees believed that audiences are more likely to pay for exclusive, depth-based content that they can't get elsewhere, such as in-depth analysis, said Interviewee 8. Other elements that the interviewees believe audiences may be more inclined to pay for than speed include trust,

said Interviewee 4, and a richer, perhaps more visual, consumption experience, said Interviewee 6.

This is not to say that there is no way to monetize speedy content. In fact, several interviewees spoke of Bloomberg and Reuters' practice of charging a steep premium for select clients to receive up-to-date market analysis and specialized business news reporting a full two seconds before the wide release. But the consensus among most interviewees is that—niche news such as political and business analysis aside—it would be difficult to charge the general public for speedy updates on general news updates.

Not only would it be difficult, but Interviewee 1 also believed it would be unethical, or even illegal at times, to charge people for speedy updates, "I don't know, I call it insider trading. I mean I think it is so fraught with trouble that this idea of trying to monetize speed has... That's a downside that can put you in prison if what you're actually doing can be conceived of as insider trading." This concern speaks to most journalists' sense of social responsibility. In Interviewee 4's words, "Most of us are not in this business to get rich. If we were we'd be in another business. We are in this business because we think it's important to communicate good information… because there's so much bad information out." In other words, the flip side of charging people for speedy update is that those who do not, or cannot, pay a premium fee are barred from having equal access to news information, and this is something that not all journalists are comfortable with.

In sum, most interviewees believed that speed-driven journalism may encourage news consumption and lead to more traffic in the short-term, but in the long-term, especially if speed-driven news is produced at the expense of accuracy or quality, it will harm news organizations' brand and credibility, which in turn will decrease news use

down the road. Also, regardless of the cyclical relationship between news credibility and news use, most of the interviewees believe that speed-driven journalism does not increase audiences' paying intent, and this poses a problem for the print industry because while most newspapers still struggle to come up with a viable business model online, their current pursuit of speedy updates and more frequent publications does not seem like a feasible solution to the problem.

Perceived effects of Twitter on news production

Turning the attention to social media, this study also explored the extent to which Twitter, one of the fastest ways for news and information to spread online, influence news production (**RQ5**). All of the interviewees said that they are encouraged to use social media, such as Facebook or Twitter, to help with reporting and connect with audiences. "We are told to pretty much use whatever social media we have and if we don't have Twitter, Facebook or Instagram, to get it. There was a big push recently to get everybody on Twitter. You know, no reporter left behind," said Interviewee 5.

One way Twitter has been used in reporting is as a vehicle for live-tweeting, to "get real information out in telegraphic form," said Interviewee 1. Twitter is especially useful for eye witness accounts, said Interviewee 9; public meetings, said Interviewee 6; courtroom talks, trials and natural disasters, said Interviewee 7; and speeches and elections, said Interviewee 8. Nonetheless, live-tweeting is not the most common use of Twitter among print journalists simply because "There isn't always an event that has that much inherent interest in it that people are really going to want to know from minute to minute what's happening," said Interviewee 7.

When asked how Twitter is embedded in their news routines, most interviewees said that they use Twitter to share what is interesting. "Twitter's definitely where I talk

about what I've done, and I share the things that I'm interested in, which tend to have a relationship to the things that I'm working on," said Interviewee 6. When I asked who constituted his "imagined audience" when it comes to Twitter—that is, to whom does he tweet? Interviewee 6 remarked, "Well, if you look at my Twitter feed, it's other journalists. My followers are disproportionately other journalists." Interviewee 7 agreed, "I certainly think there are a lot of other journalists who use Twitter to keep up with each other," remarked Interviewee 7. Interviewee 3 also made a similar point,

> "Sometimes it feels like journalists are just engaging with each other on Twitter, honestly. Like okay, how many real people are actually on there? Because there are so many journalists who use it to share their work and ideas, it can begin to feel like a kind of insular conversation."

According to the interviewees, Twitter is also often used to find information or potential sources for reporting. For example, Interviewee 5 gave the following account:

> "Recently we had [a murder in the suburb]… a17-year-old boy murdered by allegedly two of his classmates who were 16. When we were putting together follow-ups for that story we needed to reach out to some of his classmates, students who knew him, people who could've given a better picture of who the alleged murdered were and who the victim was. For that we turned to Twitter, because that was the best way to reach out to a high-school crowd. They are all on it, you know. They are all tweeting about it because for some reason people love to go on social media to talk about grief, instead of just keeping to themselves… I don't know, it must be a high school thing, but news spread so quickly. Before we knew the name of the victim they had posted it. Before we ever found out the name of the suspects the kids were all over it, saying who they thought it was and what they thought happened. That's often a good way of finding information that you can verify with the police."

Interviewee 1, Interviewee 3 and Interviewee 8 also talked about instances where Twitter was used effectively to find people who fit a particular category for a particular news story, such as gay couples who are affected by same-sex marriage rulings or people who had ridden a certain bus line.

Overall, Twitter does not change the way news reporting is done among most interviewees, but it makes it easier for journalists to network with each other by allowing them to share their work and interests in an open forum. Also, it facilitates the process of source-seeking for some journalists, which is especially helpful in the speed-driven, highly competitive online environment.

Perceived effects of Twitter on audience reception

Aside from news production, the interviewees were also asked how they think Twitter influences audience reception (**RQ6**). Not many interviewees had an opinion on this matter—many replied, "That's a good question" or "I don't know." Those who have an opinion don't believe Twitter enhances credibility. In Interviewee 1's words, "I don't think that Twitter can enhance my credibility with people. I think it makes me more useful to them as a source of quick information." On the other hand, Interviewee 5 thinks it's "possible" that Twitter makes a news organization seem more trustworthy because it shows that the news organizations are reaching out to, as opposed to hiding from, audiences.

The interviewees overwhelmingly agreed that Twitter encourages news use. Interviewee 10 believes that tweets, serving as teasers, are a good way to lure news audiences to news stories, and Interviewee 7 seconds this perspective. But most do not believe Twitter encourages audiences' paying intent.

Interviewee 10 is the only person who thought Twitter may indirectly contribute to monetary gains for news organizations by encouraging audiences to subscribe to their news website through increase in news use. In contrast, most interviewees did not believe speed will increase audiences' paying intent because a lot of speed-driven news is already free, and only special services like Bloomberg has successfully monetized on speed from

those in trading businesses. “I think at this point that there’s a lot of [news] out there for free. So how do you make people pay for something that they are currently getting for free? I don’t know,” said Interviewee 2. Amalgamating both views, Interviewee 8 made the following observation,

> “I think theoretically if you're a big Twitter user and follow the newspaper closely, that means you're engaged and you might be willing to pay for it, but at the same time, you might also have the feeling that any news you can get, you can get through Twitter, so you might not feel the need to pay for it. I'm not really sure about that. I can see the answer going either way.”

Compared to their discussion of the perceived impact of speed-driven journalism on news audiences, the interviewees were relatively laconic in their discussion on the perceived impact of Twitter on news audiences. Nonetheless, this is expected given one of the earlier findings suggest that many journalists mainly use Twitter to communicate with other journalists as opposed to interacting with their audiences.

Concerns about the future of speed-driven journalism

At the end of each interview, all of the interviewees were asked to discuss and elaborate on whether or not they worry about the future of speed-driven journalism. Most of the interviewees expressed concern about its effect on news production—specifically, the probable compromise on accuracy in the quest for speedy updates.

> “I see no real downside to the speed *unless* journalists compromise their ethics, unless journalists compromise their fact checking,” said interviewee 7. That’s what we’ve got to be careful about. We’ve still got to have ethics. We’ve still got to fact check… We’ve still got to have the same skepticism that if anything seems too good to be true, it probably is not true.”

Elaborating on this view, Interviewee 9 also spoke of the likelihood that the drive for speed at the expense of quality will drive good journalists away from the profession:

"If we sacrifice the quality of what we do for the leniency of trying to get some hits online, then there are going to be a lot fewer journalists… There's just no doubt about it."

While most of the interviewees' concerns regarding the future of speed-driven journalism lie in its impact on news production, some also discussed its negative impact on news audiences and society at large. For example,

> "We have a nation that is moving so fast that it does not want to stop and consider things. It wants a tweet or a blog. Society does not, as a whole, want to sit down and read sixty inches that delve in-depth into the ins and outs of things… It is a really, really dangerous trend in society that people are satisfied with just a line when you need a paragraph, and they're satisfied with just a paragraph when they really need eight inches. And they're satisfied with eight inches when they really need sixty," said Interviewee 4.

Adding to this view, "They say you're supposed to write on a third grade level, but I think we also need to be writing at a third grade attention span," said Interviewee 11.

Despite all the concerns, some interviewees expressed optimism about the future of speed-driven journalism:

> "I think it's definitely more demanding on the reporter, and news reporting was already pretty consuming work. I wouldn't say at this point I worry… I mean, the only part I worried about is, 'is the business model going to be fixed?' Because if news organizations can't really make a profit, then it won't be feasible for them to sustain staff the size that they do. So I worry about journalism because I think it has an important role to play in our society, in that way… but I think that we're all still flexible enough to adapt to this technology and get the training that we need to adjust, to be flexible, and deal with both the speed and accuracy at the same time, you know? And I think if we allow ourselves to be creative, we'll come up with more and interesting ways of telling stories. So… I am hopeful about the future," said Interviewee 3.

Echoing this optimism, Interviewee 7 concluded, "… I just think it's an exciting time."

Discussion

The quest for speedy updates and frequent publications is a rising phenomenon in contemporary journalism practice, and its influence is most notable in the newspaper industry. Through semi-structured interviews with 11 journalists from a variety of newspapers, following the grounded theory approach, this study offers rich insights on journalists' perception of how speed-driven journalism has changed their work and affected audiences, contributing to empirical understanding of the relationship between technological advancement and journalism. The following overarching themes emerged from the grounded theory analysis:

1. **Speed as a perceived threat.** Credibility is of major concern in the newspaper industry, and most interviewees saw speed as a major threat to credibility because the pursuit of speed inadvertently leads to more errors, tarnishing audiences' trust in newspapers. This concern is especially apparent in most interviewees' belief that speed will harm journalism in the long run because of the adversarial relationship between speed and news credibility.
2. **Speed as perceived audience demand.** Most of the interviewees shared the belief that they are pursuing speed-driven journalism because it is what their audiences expect and desire, and if they don't keep up with this speed chase they would soon lose audiences to other competitors. However, when pressed to elaborate on this rising audience demand, most interviewees were unaware of empirical evidence supporting this widely

shared perception, rendering speed a *perceived* audience demand that nevertheless exerts real influence on news production among print journalists.

3. **Perceived demand overrides perceived threat**. Despite most interviewees' concern with speed's hurting journalism and tarnishing news credibility in the long run, all of the interviewees not only expressed familiarity with, but also shared ample examples of how they have attempted to meet the perceived audience demand by publishing faster and more frequently. While many speed-driven practices are institutionalized rather than voluntary, such as publishing shorter stories, the extent to which such practices have been adopted by a majority of the interviewees speak to the prioritization of perceived audience demand over perceived threat, or short-term gains over long-term consequences. Nonetheless, both short-term gains and long-term consequences are based on journalists' perception rather than empirical evidence.

Given that technological advancements will only make everything faster and the ease of digital publication will encourage more information providers, professional or otherwise, to enter the competitive online news market for scarce audience attention, it is clear that speed-driven journalism is here to stay in the online news environment. However, the fact that most interviewees in this study do not believe speedy news content contributes to a viable, or ethical, economic model is noteworthy, and newspapers are encouraged to experiment with other ways of delivering news that not only upholds news

credibility and encourages news consumption, but also increases the likelihood that audiences will pay for the content. Moreover, newspapers are encouraged to examine how speed-driven journalism influences audience perception, reception, and paying intent as to better understand audience needs, and this is the task that study 2 takes on.

STUDY 2: EXPERIMENT ON AUDIENCES

The between-subject experiment was conducted with 220 U.S. residents on Amazon Mechanical Turk. The subjects were randomly assigned to either the fast or slow group, with 110 in each group, and the order of the news stories—two weather and two crime stories—was randomized to minimize the chance of order effect.

Descriptives

The majority of the subjects (78.2%) are between ages 18-34, 17.5% of the subjects are between age 35-54, and 4.4% of the subjects are 55 or older. About 75% of the subjects are men. Of all the subjects, 69.6% are White, followed by 13.7% Asian, 7.4% African American, and 9.2% "Other." Over half (53.9%) of the subjects do not have a college degree, 33.5% of the subjects have a college degree, and 12.6% of the subjects have an advanced degree (e.g., M.A., J.D., or Ph.D.).

In terms of media usage, the subjects typically consume most breaking news (when breaking news events occur) (M = 5.18; SD = 1.43; range = 1 to 7), followed by general news (M = 4.85 SD = 1.44; range = 1 to 7), weather news (M = 4.38; SD = 1.78; range = 1 to 7) and crime news (M = 3.87; SD = 1.59; range = 1 to 7). About 10% of the subjects have ever paid for access to news online, and only 5.3% of the subjects are currently paying for the news online. Of the 5.3% who are current paying for the news

online, 54.5% pay through a print/digital bundle, and the rest are paying for digital-only (N =5).

Manipulation Check

A manipulation check was done to ensure that the stimulus—speed—is perceived differently in the two conditions. Independent sample t-tests revealed that those in the fast group do perceive the news stories as having been published in a more speedy fashion when compared to those in the slow group (see Table 1).

Table 1: Perceived Difference in Speed Across the Four News Stories Based on Independent Sample T-Tests

	Experimental Conditions		
	Slow *M* (SD)	Fast *M* (SD)	Independent Sample T-Test
Story 1	4.76 (1.20)	5.32 (1.50)	t (204) = 3.00**
Story 2	4.60 (1.22)	5.46 (1.36)	t (204) = 4.83***
Story 3	4.84 (1.16)	5.47 (1.39)	t (203) = 3.56***
Story 4	4.66 (1.14)	5.57 (1.34)	t (203) = 5.22***

Note: N = 220. *p<.05, **p<.01, ***p<.001.

Overall Findings From MANCOVA

Five dependent variables (news credibility, future use, paying intent, readability and selective scanning) and three covariates (news interest, general news use and news payment) were entered together in a MANCOVA that examined all four stories as an

index.[3] MANCOVA corrects for chance findings of significance when multiple tests are performed, protecting the analysis against inflated Type 1 error rates. Also, multivariate tests take into account correlations among dependent variables, which makes it more powerful for detecting group differences. Using Wilks' Lambda, significant effects were found for speed, Wilks' Lambda =.79, $F(5, 188) = 9.94$, $p<.001$, news interest, Wilks' Lambda = .44, $F(5, 188) = 48.54$, $p<.001$, general news use, Wilks' Lambda = .87, $F(5, 188) = 5.42$, $p<.001$, and news payment, Wilks' Lambda = .89, $F(5, 188) = 4.84$, $p<.001$.

Specific Effects on News Credibility

H1 posits that those in the fast group will perceive news stories to be significantly less credible than those in the slow group. H1 is not supported because no significant statistical difference was found between the two groups (See Table 2), $F(1, 192) = 1.34$, $p = .25$.

When univariate analyses were examined, news interest, $F(1, 192) = 37.32$, $p<.001$, $\eta_p^2 = .16$, was the only predictor of news credibility.

[3] MANCOVA was also performed for each news story, with Bonferroni correction to counteract the problem of multiple comparisons. All of the analyses at the individual news stories' level are qualitatively the same as what is presented below, except those in the slow group ($M = 5.31$, $SD = 1.09$) found the bank robbery story significantly more credible than those in the fast group ($M = 4.63$, $SD = 1.69$). Nonetheless, given 20 pairs of contrasts were examined in this fashion—with four news stories and five dependent variables—having one pair of significant contrast is not unexpected from a statistical standpoint.

Specific Effects on Future Use

H2 states that those in the fast group will be more likely to consume more news stories than those in the slow group. H2 is not supported because no significant statistical difference was found between the two groups (See Table 2), $F(1, 192) = .13, p = .72$.

When univriate analyses were examined, news interest, $F(1, 192) = 220.20$, $p < .001$, $\eta_p^2 = .53$, and general news use, $F(1, 192) = 20.06$, $p < .001$, $\eta_p^2 = .10$ were significant predictors of future use.

Specific Effects on Paying Intent

H3 predicts that those in the fast group will not be significantly different from those in the slow group when it comes to paying intent. H3 is supported (See Table 2), $F(1, 192) = .58, p = .45$.

When univariate analyses were examined, news interest, $F(1, 192) = 29.77$, $p < .001$, $\eta_p^2 = .14$, and news payment, $F(1, 192) = 6.82$, $p < .05$, $\eta_p^2 = .03$, were significant predictors of paying intent.

Specific Effects on Readability

RQ7 asked whether those in the fast group consider news articles presented in the live blog-like format is easier or harder to follow. MANCOVA revealed that those in the fast group are significantly more likely to deem news articles harder to follow (See Table 2), $F(1, 192) = 43.92, p < .001, \eta_p^2 = .19$.

When univariate analyses were examined, news interest was the only predictor of readability, $F(1, 192) = 36.25, p < .001, \eta_p^2 = .16$.

Specific Effects on Selective Scanning

RQ8 asked whether selective scanning is more or less likely to occur among those in the fast group compared to those in the slow group. MANCOVA revealed that the two groups are not statistically different (See Table 2), $F(1, 192) = 1.92, p = .17$.

When univariate analyses were examined, news interest, $F(1, 192) = 5.12, p < .05$, $\eta_p^2 = .03$, and news payment, $F(1, 192) = 13.31, p < .001$, $\eta_p^2 = .07$, were predictors of selective scanning, with those who find the news more interesting and are already paying for the news online doing more selective scanning.

Specific Effects on Article Navigation

RQ9 asked whether those in the fast group read news articles presented in the live blog-like format from top-down or bottom-up. Descriptive statistics revealed that on average 67.68% of the subjects in the fast group read the news from bottom-up, which is from the oldest to the most recent updates.

Table 2: MANCOVA of the Effect of Speed on News Credibility, Future Use, Paying Intent, Readability and Selective Scanning

	Experimental Groups					
	Slow			Fast		
Dependent Variables	*M*	*SD*	*N*	*M*	*SD*	*N*
News Credibility	20.63	3.97	104	19.29	5.21	98
Future Use	17.40	5.05	107	16.00	6.44	98
Paying Intent	8.07	5.08	107	8.23	5.63	99
Readability	22.89*	3.40	107	17.42	6.82	98
Selective Scanning	27.03	2.15	107	26.26	3.27	98

Note: *$p<.05$.

Discussion

A major finding from this experiment revealed that news audiences understand some errors and corrections are bound to happen when news is produced fast, which explains why subjects in the fast group did not consider news to be any less credible than subjects in the slow group. This discovery is inconsistent with the finding from study 1 where most interviewees perceived speed as a threat to news credibility. On the other hand, this discovery echoed one of the findings that emerged from study 1 where some interviewees believed that news audiences have different expectations on how accurate news should be online versus in print. Taken together, these findings revealed that news audiences do not expect news that is produced fast to be as accurate as news that takes longer to produce, nor do they consider it less credible.

The fact that a majority of the findings from this experiment are counter to findings from study 1 suggests that a gap exists between journalists' perception of how speed-driven journalism affects news audiences and the reality. Instead of speed, the extent to which the subjects find a news story interesting turned out to be the only consistent variable predicting news credibility, future use, paying intent, readability and selective scanning. News interest accounted for more than half (53%) of the variance in future use.

This study also found that news presented in the live blog-like format was deemed harder to follow by those in the fast group, and most of the subjects in the fast group read the news articles from bottom-up, which is from the oldest to the most recent updates.

Large sample sizes generally help minimize the chance of Type II errors. Following conventional standards, with alpha set to .05 and Power .80, this study (*N*=220) is able to detect a medium-to-large effect size (Cohen's d = .34). The fact that all of the MANCOVAs conducted in this study were non-significant, except for readability, suggests that the effect of speed on the observed dependent variables in this study must be small, if it were to exist at all.

Chapter 5: Conclusion

Through interviews with print journalists and an experiment on news audiences, this dissertation offers a few theoretical constructs with which to understand journalists' perception of how speed affects news work and audiences, and assess whether speed enhances or hinders news consumption in terms of news credibility, use, paying intent, readability and selective scanning. The next section summarizes key findings from both studies, followed by discussions of theoretical and professional contributions, and suggestions for future studies based on this dissertation's limitations.

SUMMARY OF KEY FINDINGS

While many interviewees in study 1 believed that the rise of speed-driven journalism is the result of the newspaper industry's collective attempt to meet audience demand, the precise nature of such demand is unclear to many working in the industry, propagating a notable disconnect between how journalists think speed affects news audiences and the reality. It is thus not surprising that findings from study 1 were generally not supported by the experiment in study 2.

Most interviewees in study 1 believed that as long as speed-driven journalism is pursued at the expense of accuracy, the future of journalism is in peril because speed inevitably leads to more errors, which in turn erodes journalists' news credibility and drives audiences away in the long run. However, experimental findings from study 2 revealed that speed did *not* harm news credibility. Rather than holding speed-induced errors and corrections against journalists, news audiences understand that these errors and corrections are simply a part of speed-driven journalism and do not reflect badly on journalists' credibility. In other words, those who speculated that audiences have

different expectations on how accurate news stories should be online versus in print in study 1 were right.

In terms of news consumption, most interviewees in study 1 believed that speed-driven journalism encourages more news use because it leads to more fresh content being produced around-the-clock, which makes news consumption a more immediate experience for the users. However, experimental findings from study 2 revealed that speed-driven journalism did *not* increase the likelihood that news audiences will consume more news. This finding is especially unexpected from a uses and gratifications perspective, which posits that users are more likely to repeatedly use a medium if it fulfills their gratifications (Blumler & Katz, 1974; Katz, Haas, & Gurevitch, 1973; Lee, 2013a; Rubin & Step, 2000; Ruggiero, 2000). Suppose the industry were right that audiences seek instant gratification in today's news media landscape (Alsop, 2011), why did the experiment reveal that fast news did not promote more use?

One possible explanation lies in study 2's examination of readability. Compared to those in the slow group, the experiment revealed that those in the fast group considered news presented in the live blog-like format to be significantly harder to follow. Also, the experiment revealed that most of the subjects in the fast group read the news stories from bottom-up—that is, from the oldest to the newest updates. This is inconsistent with how English news is generally consumed, and may explain why subjects in the fast group found the news harder to follow even though both groups read news stories of identical content in the experiment.

The only consistent finding between study 1 and 2 is that the experiment revealed, as the interviewees surmised, speed-driven journalism did not increase the subjects' inclination to pay for news. However, this finding poses a problem for the print industry

because it suggests that speed-driven journalism may not be the solution to its attempt to find a viable business model online.

THEORETICAL CONTRIBUTION

As aforementioned, this dissertation focuses specifically on the routines and social institutions levels within the hierarchy model. The former refers to unwritten cues, rules, patterns and processes that influence media content, and the latter refers to the effect of factors such as news audiences on news content. Findings from this dissertation revealed that a *perceptual disconnect* exists at the social institutions level in that journalists are not always accurate in what they think audiences want. For example, whereas the interviewees in study 1 believed that speed-driven journalism harms news credibility and promotes news use, study 2 found that it does neither. While this perceptual disconnect suggests a gap between journalists' perception and the reality, it nevertheless influences how journalists produce news and the content they create.

It's possible that a perceptual disconnect also exists at other levels within the hierarchy model. For example, journalists may have inaccurate perceptions of what management wants, what advertisers want, and what the powerful in society want. In other words, the perceptual disconnect found in this dissertation may be the tip of an iceberg that speaks to a potentially more widespread phenomenon influencing how journalists work and the content they create. In general, a perceptual disconnect carries negative implications for journalistic work because every disconnect equates a missed opportunity to create news content that meets different demands and serves different actors within society.

On the other hand, this is not to suggest that journalists have inaccurate perceptions of what different social actors demand of them across the board. For example, study 1 revealed that most interviewees were well aware of whether their newspapers prioritize "speed above all else" or "accuracy first." Many newspapers routinely circulate memos from management that discuss different organizational expectations, and such exchanges help narrow perceptual disconnect at the organizational level.

Journalists are also generally aware of peer expectations because they often interact with each other. For example, study 1 found that many interviewees predominately used Twitter to keep up with each other as opposed to interact with audiences. The limited interaction between journalists and audiences may explain the perceptual disconnect at the social institutions level.

These examples suggest that a perceptual disconnect is more likely to occur in instances where journalists have limited opportunities for interactions with the social actor in question. For example, the social systems level of the hierarchy model entails factors such as globalization. Because of language barriers and other cultural differences, journalists are less likely to have the opportunities to interact with global audiences, which increases the chance of a perceptual disconnect at this level. Future studies are encouraged to build on this theoretical discovery and explore different ways in which perceptual disconnect influences news production under the hierarchy model framework, and how it can be minimized to benefit not only journalists but also those they serve.

PROFESSIONAL CONTRIBUTION

Especially in today's highly competitive media environment, the disconnect between what journalists believe audiences want and what they actually know about what

audiences want may help explain why news organizations are having trouble promoting news use and generating profit online. Newspapers are encouraged to invest in audience research to help journalists understand how they can better serve their audiences, which will in turn promote news use and paying intent.

While most interviewees worried about the adverse effect of speed on journalism in the long-term, particularly in terms of news credibility, findings from study 2 suggested that even if speed-driven news articles were more likely to have errors in them, so long as news audiences find a news story interesting, these speed-related errors do not diminish news credibility from the audience's perspective. In terms of professional contribution, this suggests that print journalists may set aside their concerns about speed deteriorating news credibility and focus instead on exploring new ways to improve journalism through the adoption of speed-driven practices. For example, one criticism of speed-driven news content is that the pursuit of speed is often done at the expense of depth. That is, speedy content often consists of a collection of quick facts rather than a map of contextual information that help news audiences understand what is going on. Given modern technology allows for quick access to a plethora of information online, journalists may use this to their advantage and take on the role of information curator because they have the professional training to better discern information quality or source authenticity when compared to average news audiences.

One concern with news presented in speed-driven, live blog-like format is that it may be harder for news audiences to follow, based on findings from study 2. This raised question about the readability of speed-driven news, and thus news professionals are encouraged to conduct readability assessments. For example, given most of the subjects in the fast group read the news stories from bottom-up, which is consistent with the

chronological order of news updates but inconsistent with how most users engage with English websites, newspapers may explore the possibility of offering the option that allows readers to choose whether they want to read live blog-like news updates with fresher content at the top or bottom of the page. After all, those who are new versus those who have been following a story may have different preferences in how they engage with live blog-like news updates. It should be noted that all of the subjects in the experiment were reading the news story for the first time, which may explain why most read the updates following a chronological order.

Nonetheless, this suggestion may work best for breaking news events that are more transient in nature. For events that last over a longer period of time, perhaps the use of layering—organizing speedy updates along a reversed timeline, with expandable sections—may help.

LIMITATIONS AND FUTURE STUDIES

This dissertation is enriched by its mixed method approach—interview findings from study 1 were helpful to the design and interpretation of findings from the experiment in study 2. Nonetheless, this dissertation is not without limitations that necessitate more research to improve upon.

Because of the fixed effect nature of experiments, findings from study 2 are limited in their generalizability. Future studies are encouraged to replicate this study to further assess speed-driven journalism's effect on audiences. Also, because study 2 only tested the effect of speed on short stories with a few errors, future studies should examine whether speed has different effects on long stories that encompass more updates and more chance for errors. Moreover, future studies are encouraged to examine the impact of speed-driven journalism on other factors that were not examined in this study but may be

crucial to the health of democracy, such as civic participation. Furthermore, it should be acknowledged that live blog-like formats represent only one type of speed-driven news presentation. Thus, findings from the experiment are limited in its generalizability to other types of speed-driven news presentation.

Because of the exploratory nature of Study 2 and the fact that it examined 6 dependent variables with 4 news stories, the experiment primarily used single-item measures, which is a limitation of the study. Had multiple-item questions been used to measure the dependent variables, however, the experiment would have taken much longer to complete, increasing the chance of subject fatigue. Nonetheless, because most of the single-item measures were informed by the literature and closely tied to the central theoretical constructs being tested in the study, they should not invalidate the findings. Future studies are encouraged to replicate this study using more sophisticated measures. For example, future studies may consider using the Flesch Reading Ease Score to assess readability and employ a more elaborate set of measures to examine different aspects of news credibility.

Given this dissertation found a notable disconnect between what journalists think they know about what audiences want and actuality, future studies are encouraged to conduct more audience research using a mixed method approach to help inform journalists and minimize misperception.

APPENDIX

A. PRINT JOURNALISTS INTERVIEW GUIDE

This interview guide is meant to serve as a framework for interviewing print journalists about the ways in which speed-driven journalism affects their professional norms, routines and output, as well as the extent to which Twitter complicates the relationship between speed-driven journalism and news production. The interviewees all work at newspapers that also have online operations.

1. Some say that the contemporary quest for speedy news updates and more frequent publications online, or "speed-driven journalism," has changed the way journalism is practiced. Do you think that is true? What changes, if any, do you see?

2. What do you think contribute to this rise of speed-driven journalism?

3. To what extent has speed-driven journalism (i.e., this quest for speedy updates and more frequent publications) affected (a) professional norms in the print industry, (b) your work routines, and (c) your published work?

4. How has Twitter changed (a) professional norms in the industry, (b) your work routines, and (c) your published work?

5. How do you think your audiences like speed-driven journalism? Particularly, are they more likely to (a) believe news as credible? (b) Consume more news? (c) Be more willing to pay for the news?

6. How do you think your audiences like Twitter as a news platform? Particularly, are they more likely to (a) believe news as credible? (b) Consume more news? (c) Be more willing to pay for the news?

7. Do you worry about the future of speed-driven journalism? Why or why not?

B. EXPERIMENTAL STIMULI

Below are the experimental stimuli. The experiment will employ a between-subject design. The participants will be randomly assigned to either the "fast" or the "slow" group, and everybody will read the same four news stories, except the "fast" stories are presented in the format of rolling news, which is common for breaking news events these days where news updates are published and corrected in real time. A series of questions on perceived speed, news credibility, use and paying intent are asked at the end of each news story (see Appendix C).

Story 1: Weather / Flood

Slow Condition

Dozens dead in San Antonio Flooding, Landslides
By NICHOLAS KULISH

At least 60 people were killed and dozens injured in San Antonio after heavy rains caused flooding and landslides in Bexar County, officials said.

Police spokesman Jon Hermes said hundreds more had been displaced because of damage to their homes. Willy Greenberg, spokesman for Mayor Art Martinez de Vera, said the damage is extensive.

"Many houses in the suburbs were destroyed by the rain," Greenberg said. "Many of the victims are children, and the houses collapsed on them."

Martinez de Vera said burials for the dead and treatment for the injured are being organized. Torrential rains began on Sunday night and continued into Monday morning, causing power failures and cutting off roadways near The Far Northwest.

Fast Condition

Dozens Dead in San Antonio Flooding, Landslides
By NICHOLAS KULISH

10:02 a.m.: Torrential rains began on Sunday night and continued into Monday morning, causing power failures and cutting off roadways near The Far Northwest.

9:40 a.m.: Mayor Martinez de Vera said burials for the dead and treatment for the injured are being organized.

9:28 a.m.: "Many houses in the suburbs were destroyed by the rain," Greenberg said. "Many of the victims are children, and the houses collapsed on them."

9:23 a.m.: Police spokesman, Jon Hermes, said that hundreds more had been displaced because of damage to their homes. Willy Greenberg, spokesman for Mayor Art Martinez de Vera, said the damage is extensive.

9:17 a.m.: *Correction*—At least 60, not 100, people were killed.

9:12 a.m.: At least 100 people were killed and dozens injured in San Antonio, after heavy rains caused flooding and landslides in Bexar County, officials said.

Story 2: Weather / Snow storm

Slow Condition

Chicago Declares Disaster after Ice Storm
By JASON ROGERS

Cook County, Chicago, declared disaster Wednesday morning.

The urban county, much of which is the city of Chicago, is among the hardest-hit in terms of power outages, with PECO reporting 93,500 customers without service. That's one-third of all the utility's customers in Cook.

"We issued the disaster declaration because the situation is so serious in Cook County, and we want to be able to be prepared to meet the needs of our constituents," Cook County board president's spokesman Wilson Shapiro said during a phone interview.

"We're seeing call volume to our 9-1-1 center, accidents on our roadways, power outages

above the levels of Hurricane Sandy," said Shapiro. "... Our folks are doing a great job dealing with it, but nevertheless it's a very serious thing."

By mid-morning the county had reported 4,000 calls into 9-1-1 since 4 a.m. The daily average is about 2,400.

There have been 340 electrical fires, 1,001 road obstructions, 153 vehicle accidents, 700 calls for fire assistance, and 4,000 calls for police assistance.

Additionally, John H. Stroger Jr. Hospital is without power and is working off of backup generators that are expected to last only another four hours.

A number of shelters are without power at this time, including the youth shelter and the Bedford Park Public Library.

County roads are clear, but trucks are on standby for additional salting if needed throughout the day.

Fast Condition

Chicago Declares Disaster After Ice Storm
By JASON ROGERS

11:16 a.m.: County roads are clear, but trucks are on standby for additional salting if needed throughout the day.

11:14: a.m.: *Correction*—The Lincoln Park Community Shelter is not without power.

11:10 a.m.: A number of shelters are without power at this time, including the youth shelter, the Bedford Park Public Library and the Lincoln Park Community Shelter.

11:02 a.m.: Additionally, John H. Stroger Jr. Hospital is without power and is working off of backup generators that are expected to last only another four hours.

10:55 a.m.: There have been 340 electrical fires, 1,001 road obstructions, 153 vehicle accidents, 700 calls for fire assistance, and 4,000 calls for police assistance.

10:51 a.m.: By mid-morning the county had reported 4,000 calls into 9-1-1 since 4 a.m. The daily average is about 2,400.

10:48 a.m.: "We're seeing call volume to our 9-1-1 center, accidents on our roadways, power outages above the levels of Hurricane Sandy," said Shapiro. "... Our folks are doing a great job dealing with it, but nevertheless it's a very serious thing."

10:42 a.m.: "We issued the disaster declaration because the situation is so serious in Cook County, and we want to be able to be prepared to meet the needs of our constituents," Cook County Board President's spokesman, Wilson Shapiro, said during a phone interview.

10:38 a.m.: *Correction*—PECO reported 93,500 customers without service. That's one-third of all the utility's customers in Cook.

10:33 a.m.: The urban county, much of which is the city of Chicago, is among the hardest-hit locally in terms of power outages, with PECO reporting 187,000 customers without service. That's two-third of all the utility's customers in Cook.

10:31 a.m.: Cook County, Chicago, declared disaster Wednesday morning.

Story 3: Crime / Bank robbery

Slow Condition

Suspect Sought in Los Angeles Bank Robbery
By RICHARD MUSKAL

Los Angeles police and the FBI are searching for a man suspected of robbing a Wells Fargo Bank branch in Culver City.

The bank, in the 10011 block of Washington Blvd., was robbed around 11:15 a.m. Monday.

Investigators say the suspect walked inside and displayed a paper bag, claiming to have an explosive and demanding money.

After receiving an undisclosed amount of cash, the suspect fled on foot. The paper bag was left at the scene and no explosive was found.

The suspect is described as a white male in his late 30s to early 40s, approximately 6 feet 2 inches tall, about 240 pounds, with a pale complexion and a full beard. He was last seen wearing a blue hooded sweatshirt, black vest, and dark-colored winter cap.

Authorities say he is considered armed and dangerous.

Anyone with information is urged to contact the FBI at 310-417-4091 or the Los Angeles Police at 310-417-TIPS (8477). Tips can remain anonymous.

Fast Condition

Suspect Sought in Los Angeles Bank Robbery
By RICHARD MUSKAL

11:48 a.m.: Anyone with information is urged to contact the FBI at 310-417-4091 or the Los Angeles Police at 310-417-TIPS (8477). Tips can remain anonymous.

11:44a.m.: Authorities say he is considered armed and dangerous.

11:41 a.m.: *Correction*—The suspect was last seen wearing a black hooded sweatshirt and blue vest.

11:35 a.m.: The suspect is described as a white male in his late 30s to early 40s, approximately 6'2" tall, 230-250 pounds, with a pale complexion and a full beard. He was last seen wearing a blue hooded sweatshirt, black vest, and dark-colored winter cap.

11:26 a.m.: *Correction*—No explosives was found.

11:21 a.m.: After receiving an undisclosed amount of cash, the suspect fled on foot. The paper bag was left at the scene and explosives were found in the paper bag.

11:20 a.m.: Investigators say the suspect walked inside and displayed a paper bag, claiming to have an explosive and demanding money.

11:17 a.m.: The bank, in the 10011 block of Washington Blvd., was robbed around 11:15 a.m. Monday.

11:14 a.m.: Los Angeles police and the FBI are searching for a man suspected of robbing a Wells Fargo Bank branch in Culver City.

Study 4. Crime / Police shooting

Slow Condition

Miami Teen, Shot by Cop, Arrested on Attempted Murder Charges
By Associated Press

A 17-year-old boy has been arrested on suspicion of three counts of attempted murder after a confrontation with police at Miami Senior High School on Tuesday morning, authorities said.

School officials in Miami recognized the boy as a runaway and called police after he showed up at the school Tuesday morning, said Florida Department of Education spokesman Joe Follick.

The boy lunged at officers who arrived and tried to take him into custody, said Maj. Anthony Chapman, commander of the Criminal Investigations Department for Miami police.

The teen attacked one of the officers with a knife, cutting him on the torso, Chapman said.

One of the officers then fired two shots, hitting the boy once in the wrist. He was hospitalized with non-life-threatening injuries.

The school, a public high school near downtown Miami, was placed on lockdown, but students were later released.

The situation at the school was "under control," said a post on the school's website.

"The Miami Police Department is wrapping up their investigation," the post read. "...Please remain calm."

The knife posed a clear threat and officers were trained to stop a threat, regardless of the suspect's age, said the president of Miami police union, Francis Suarez.

Fast Condition

Miami Teenager, Shot by Cop, Arrested on Attempted Murder Charges
By AP

11:56 a.m.: The knife posed a clear threat and that officers were trained to stop a threat, regardless of the suspect's age, said the president of Miami police union, Francis Suarez.

11:53 a.m.: "The Miami Police Department is wrapping up their investigation," the post read. "...Please remain calm."

11:48 a.m.: The situation at the school was "under control," said a post on the school's website.

11:44 a.m.: *Correction*—The school was placed on lockdown, but students were later released.

11:40 a.m.: The school, a public high school near downtown Miami, was not placed on lockdown.

11:37 a.m.: *Correction*—The teenager was shot in the wrist, not in the thigh.

11:28 a.m.: One of the officers then fired two shots, hitting the boy once in the thigh. He was hospitalized with non-life-threatening injuries.

11:25 a.m.: The teen attacked one of the officers with a knife, leaving the officer's torso with a minor cut, said Chapman.

11:22 a.m.: The boy lunged at officers who arrived and tried to take him into custody, said Maj. Anthony Chapman, commander of the Criminal Investigations Department for Miami police.

11:19 a.m.: School officials in Miami recognized the boy as a runaway and called police after he showed up at the school Tuesday morning, said Florida Department of Education spokesman, Joe Follick.

11:15 a.m.: A 17-year-old boy has been arrested on suspicion of three counts of attempted murder after he was shot by a police officer at Miami Senior High School Tuesday morning, authorities said.

C. KEY MEASURES

Questions 1-5 are asked at the end of each news story, and the rest of the questions are asked at the end of the experiment.

News Credibility

1. From your perspective…

	Not at all						Very
a. How credible did you find this story?	1	2	3	4	5	6	7

Selective Scanning

2. How much of the news article did you read?

Read only a few sentences		Read about half of the article			Read the entire article	
1	2	3	4	5	6	7

Future Use

3. How likely are you to read other news stories like this one?

Not at all						Very
1	2	3	4	5	6	7

Readability

4. In terms of readability, how easy was this story to follow?

Not at all						Very
1	2	3	4	5	6	7

Paying Intent

5. From your perspective…

a. How likely are you to pay for this news story if it were behind a paywall?

Not at all						Very
1	2	3	4	5	6	7

Article Navigation

6. Did you read this story top-down (i.e., from the latest update to the first update) or bottom-up (i.e., from the first update to the latest update)?

1. Top-down
2. Bottom-up

Speed / Manipulation Check

7. From your perspective…

	Not at all						Very
a. How fast was this news story published?	1	2	3	4	5	6	7

News Payment

8a. Have you ever paid for access to news online? Yes/No

8b. Are you currently paying for any news online (i.e., online subscription or print/digital bundle)? Yes/No

8c. [If Yes] Are you paying for a print/digital bundle package or digital-only?

1. Print/digital bundle
2. Digital-only
3. Not sure
4. Other _____

General News Use	Never						All the time
9. How often do you read/watch/listen to news in general?	1	2	3	4	5	6	7

Demographic Information

10. Are you?

1. Male
2. Female

11. What is your age today? ____

12. What is your race or ethnicity?

1. White
2. African American
3. Asian

4. Hispanic or Latino
5. American Indian/Alaskan Native/Pacific Islander
6. Other (Specify) _____

13. What is the highest level of education that you have completed?
    1. Less than high school (Grade 1-8 or no formal schooling)
    2. High school incomplete (Grade 9-11 or Grade 12 with NO diploma)
    3. High school graduate (Grade 12 with diploma or GED certificate)
    4. Some college, no degree (includes community college)
    5. Two year associate degree from a college or university
    6. Four year college or university degree/Bachlor's degree (e.g., BS, BA, AB)
    7. Some postgradauate or professional schooling, no postgraduate degree
    8. Postgraduate or professional degree, including master's, doctorate, medical or law degree (e.g., MA, MS, PhD, MD, JD)

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