

FROM INSTRUMENTAL USE TO INSTITUTIONAL ROUTINE:
A LONGITUDINAL STUDY OF SPORTS JOURNALISTS
LIVE-TWEETING THE DAYTONA 500

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ABSTRACT

This dissertation studies how sports journalists are adapting to the emerging institutional requirement to use Twitter to live-tweet during sporting events. This phenomenon is the result of the rise of the “second screen,” wherein stakeholders of a live televised event convene to discuss the event online via their second screen, the computing device they use while watching the event. Institutional theory and the news ecology model framework offer a basis for considering reasons why professional journalists have shifted to live-tweeting during sporting events, which is a distinct departure from pre-social media event sharing. As journalist live-tweeting is a concept still being understood in both industry and scholarly research, this phenomenon as it relates to journalist professional duties bears study. A three-year content analysis of journalist live-tweeting from the National Association for Stock Car Auto Racing’s (NASCAR) premiere racing event, the Daytona 500, via a mixed method approach, was used to determine journalist tweeting behaviors during the race and denote trends or shifts over the three years.

Results indicated that there were significantly different tweet tendencies between bloggers and institutional journalists. Among the findings, bloggers were far more likely to write opinion tweets and engage with fans, while institution-affiliated journalists were far more likely to tweet information and cite sources. Tweets were more likely to be sent during caution laps than green flag laps, hashtags were not shown to be essential elements of tweets, and photo sharing was used to demonstrate credibility and access. Further, institutional print and online journalists became more homogenous in their tweeting tendencies after three years both within their peer groups and in the aggregate, offering support for institutional theory. Television broadcasters reporting in broadcast booths tweeted more frequently with each passing year, while the trend did not hold true for other types of journalists.

Institutional theory, specifically the news ecology model, was shown to be a predictor in part of the research findings. Homogeneity and mimicry were seen in tweets, and Twitter presence was stable over all three years of data. However, elements of branding theory were also noted, including institutional journalist opinion sharing, and adding humor and promotional information in tweets.

DEDICATION

To David, J.T., and Abby. You amaze me every day and I am very proud of all three of you. You each have unique personalities and gifts to give this world, and it's been the best adventure watching you grow. I love you.

LIST OF ABBREVIATIONS AND SYMBOLS

<i>a</i>	Cronbach's index of internal consistency
ESPN	Entertainment and Sports Network
<i>M</i>	Mean: the sum of a set of measurements divided by the number of measurements
MRN	Motorsports Racing Network
<i>N</i>	Number of total
<i>n</i>	Number of subset total
NASCAR	National Association for Stock Car Auto Racing
<i>p</i>	Probability associated with the occurrence under the null hypothesis of a value
<i>r</i>	Spearman rho r correlation
<i>SD</i>	Standard Deviation
SNS	Social network site
<i>t</i>	Computed value of t test
χ^2	Chi-square
@	Twitter handle search and "tweet to" symbol
#	Hashtag

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The only thing I knew when I started the path toward a Ph.D. was that I loved to teach college students and that I needed a work opportunity that would allow me to have a family. Little did I know in 2011 that I would start an adventure that introduced me to amazing people, a fantastic opportunity to be a college student one last time, and the chance to write, travel and learn.

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Chapter One: Introduction

Sports News Creation in the 21st Century – A Social Media Shift

National Association for Stock Car Auto Racing (NASCAR) driver Brad Keselowski made Twitter history on February 27, 2012 by tweeting a photo during the Daytona 500. It was not a typical photo: it was a photo taken from inside his car, currently on the track during a red flag caution. Within one hour of the tweet, Keselowski garnered 51,000 new Twitter followers; by the next day he had over 161,000 new followers (Blount, 2012; Fox, 2012). The 51,000 new followers likely learned of the tweet instantly, as evidenced by their response during the live race. Fox Sports, the Daytona 500 television broadcast company, posted the photo from the Twitter feed on television. Yet, many race viewers saw the tweet themselves via their “second screen,” their Twitter feed from their smartphone or computer they were using simultaneously during the race. Research is still nascent regarding second screen viewership; Twitter and television usage are rising in popularity as noted below, with some television viewers purposefully engaging in second screen participation and some visiting social network sites after seeing prompts during television broadcasts. Research has not examined percentages of viewers to discern the trigger point of second screen behaviors, but as noted, the activity has increased markedly.

Use of a second screen, also termed social TV (Chorianopolous & Lekakos, 2008) has seen a marked increase. Super Bowl XLV generated 4,064 tweets per second during the 2011 game (Chiang, 2011); that number jumped to 12,233 tweets per second for 2012’s Super Bowl XLVI (Layden, 2012). Even after an advanced algorithm employed by Twitter, there were 4,291

tweets per second noted during peak moments of the 2013 Super Bowl, due to a revised tweet counting algorithm used by Twitter to in part remove retweets and hone Super Bowl specific chatter (Evangelista, 2013). Live sporting event social TV led NASCAR and Twitter to enter Twitter's first sporting event partnership in 2012, wherein both NASCAR and Twitter would cross-promote themselves during televised races ("NASCAR Partners," 2012). Twitter CEO Dick Costolo noted in a 2012 interview that he thinks, "it will be commonplace to use Twitter as the focal point on the second screen" (Lawler, 2012, para. 4) and *TheBlaze* CEO Chris Balfe noting, "Twitter has really become a de facto second screen" (Stadd, 2013). Chorianopolous and Lekakos (2012) note, "the convergence of computing with mass media has provided opportunities for computer mediated support of TV sociability" (p. 114). In 2013, Twitter and Columbia Broadcasting Service (CBS) signed a television promotion partnership and National Broadcasting Company (NBC) staged a promotional week of Twitter chatter including stars of its weekly show lineup to promote viewership on Twitter ("Twitter, tunes," 2013). It is commonplace in 2013 to see live sports and news broadcasters use their Twitter handles as part of their on-screen identities, encouraging movement to Twitter for broadcaster/fan discussion. Reality music competition show *The Voice* asked Twitter users to vote back a contestant during its 2013 broadcast in what it called a "Twitter save," thus propelling viewers to Twitter (Hyman, 2013). Given the economic reverberations in increasing traffic to Twitter and simultaneously allowing movement away from broadcasting site traffic, the money at stake in such cross-promotion gives pause for thought. Important questions about advertising and ratings revenue that television is now sharing with Twitter is still unclear, but important to consider, especially given outcomes from print news and online news in the digital era, where revenue has slashed.

Live sporting event concurrent TV/Twitter use is in the nascent stages of academic research. Sanderson and Hambrick (2012) followed journalist use of Twitter while reporting the Penn State University sexual assault scandal and Sheffer and Schultz (2010, 2011, 2012) have completed four studies regarding Twitter use as a key element of shifting sports journalist responsibilities. Yet, these studies did not approach the specific concurrent Twitter/live televised sporting event marriage where second screen behaviors occur. A 2013 search of second screen or social TV as academic research topic along with sports journalism demonstrates only two studies, one of which was the exploratory research for this dissertation (Emmons & Butler, 2013). While the above-mentioned exploratory studies have affirmed that Twitter has altered live reporting behaviors, there is not a known longitudinal study addressing how behaviors might be shifting as the instrumental practice secures a foothold in journalist routines.

While fans use Twitter to engage in second screen behavior, journalists, including sports journalists, have made Twitter their current SNS of choice (Jones, 2010; Sanderson & Hambrick, 2012; Sanderson & Kassing, 2011; Sheffer & Schultz, 2010). While aggregate numbers suggest larger usage numbers, as a whole, for Facebook, it is Twitter that has become the default social network site for journalist live reporting. Journalists' Twitter use during a live sporting event is poised for study as technology and mobility have converged to allow for instantly viewable event sharing.

NASCAR's Daytona 500 as Study Event

Professional sporting events with large television viewerships are prime research candidates for this emerging phenomenon. As Super Bowl tweet frequencies have demonstrated, certain mega events can draw exceptionally large viewing audiences converging together to be a part of the excitement. NASCAR's season premiere, the Daytona 500, qualifies as an event

worthy of viewing sport journalist tweeting behaviors. The Daytona 500 has traditionally been the most viewed NASCAR race of the season. The race was propelled into popularity as a premiere, high purse and bragging rights race from the beginning of the sport, when racers used Daytona Beach itself to race and wreck. NASCAR founder Bill France's ability to organize the racing circuit from the early beach racing days and pull together hefty purses drew competitive racers to Daytona Beach as it evolved into the paved track races on the Daytona tri-oval beginning in 1959 (Menzer, 2009). Although portions of the race had been shown on networks prior to 1979, one impressive popularity surge in race interest was during the famous 1979 Daytona 500. This race included dramatic racer story lines, a dogged race on the final lap to the checkered flag and an ensuing fistfight at the speedway. As Menzer (2009) noted, the 1979 race was a turning point in television viewership and widespread acceptance of the event as a major contender for audience interest, as it was the perfect brew of live television coverage, a snowy February day that kept wide swaths of Americans indoors looking for something to watch, and a race that delivered drama from start to finish. Another pivotal Daytona 500 moment was the death of NASCAR legend Dale Earnhardt in the final few laps of the 2001 race; replays of his wreck into turn four of the Daytona International Speedway would be viewed by millions in the following days. Earnhardt was considered by many to be the true ambassador of the sport; in an era when "flashier" drivers like Californian Jeff Gordon were seen as threatening to undermine NASCAR's Southern hard-knock roots, North Carolinian Dale Earnhardt, with his rugged persona, was a fan favorite. His death, to this day, causes even casual fans to hold up three fingers on the third lap of the race in honor of Dale Earnhardt's number 3 stock car.

NASCAR fans, deprived of their sport since the November series championship, anticipate the February Daytona race weeks with fervor. Although Daytona International

Speedway officially recognizes its almost-monthlong speedweeks starting in January with the 24 Hours of Daytona race, NASCAR fans tend to view the start of the season with the NASCAR-themed speedweeks that begin in mid-February. Sponsors and fans line up to be a part of Daytona's ten-day fanfare, including Budweiser Speedweeks, with shortened races pitting race winners from the prior year in "duels," followed by supporting circuits and series races, culminating in the Daytona 500 itself on Sunday, the final event. Many fans take annual vacations around the Daytona event and camp in the infield or nearby, soaking in the atmosphere and reconnecting with fans they'd reserved camping space with for years.

From year to year, the February race occurs when there is a televised sporting event lull after the Super Bowl, yet American viewers are still often homebound because of cold weather (Chappell, 2013). A wide range of media, usually over 500 members, tend to come to the Daytona 500, as there is a level of credibility within journalism that being at such an event holds (Oates & Polley, 2007). The Daytona 500 further lies in a fan space wherein even casual fans are willing to tune in to see the first major race of the season, and see who has improved or how new race teams look, yet are not necessarily going to pay for tickets to the race (Chappell, 2013). Viewership is high for the Daytona 500 as the first major race of the season as new drivers and teams make their appearances; the 2013 race garnered 16.7 million viewers (Chappell, 2013) and averages 10 million. Fans like to see how new race teams formed in the "silly season" will fare and have the added incentive that the season is starting over, and thus all drivers are equally able to earn points and become the next season champion.

The Daytona 500 falls into a category of what researchers have called "mega events" in sporting (Kamilla & Urmilla, 2012) that include impact on the local economy due to a large traveling group of fans and sport participants, a large television viewership, sponsorships, a

specific prize and/or championship awarded for winning, and the presence of premiere athletes in the sport. Only certain events qualify as mega events and the term is only used for events that cause such shifts in preparation and exposure for the sport and stakeholders. The Daytona 500's viewership, the two week lead up events that transform the Daytona Beach area, the must-race anticipation of top drivers, and the large televised audience are important factors that make the race an excellent second screen opportunity for fans and journalists in a virtual meeting space for live race discussions.

NASCAR is in a similar fan space with other professional sports, such as the National Football League or the National Basketball Association, in that there are avid fans loyal to the sport, avid statisticians of the players and events, and favorite athletes. An important contextual consideration for any fan base, such as NASCAR, is the historical and discursive notions of the sport culturally and within the audience. As a sport with a rebellious past (Southern White men quickly transporting illegal moonshine in the dark to avoid the police) the fan base skews White, male, and Southern. Values traditionally seen in blue collar communities, such as working with one's hands to get a job done, racing fast cars as a sign of masculinity, and accepting sponsorships from cigarette and alcohol companies demonstrate some of the perceived brashness and scrappiness of the sport. Thus, Twitter possibly reflects, amplifies or mutes such variables. While not an outcome of the study, contextual insights into the possible fans and other stakeholders using Twitter during races is important – especially that a typical fan is likely to be White, Southern, and male.

Recent studies have affirmed that sports journalists turn to Twitter to report during ongoing stories (Emmons & Butler, 2013; Lasorsa, Lewis & Holton, 2012; Sanderson & Hambrick, 2012), as audiences are interested in the professional perspective of unfolding events.

These studies demonstrate that journalists are becoming familiar with using Twitter as the social medium of choice in aspects of reporting. Thus, the Daytona 500 would be an event that many fans, and journalists, would congregate on Twitter for to engage in event sharing.

Purpose of the Dissertation

This dissertation addresses the gap in current research regarding possible reporting behaviors over time as Twitter becomes routinized in the live reporting, second screen engagement era. Journalist routines have become established over time as a result of the necessities of the field, yet what is unknown is if such necessities still maintain the same exertion over journalists today. Historically, the relative economic stability of journalism caused less concern over direct engagement with consumers due to barriers that advertising revenue created. However, in modern journalism, direct engagement with consumers is a necessity, as relevance has more dire economic consequences (Lowrey, 2011).

A prior study of NASCAR's 2012 Daytona 500 as second screen sports journalism event yielded exploratory results regarding frequencies of tweets of various categories, such as information sharing, direct fan engagement, and opinion sharing (Emmons & Butler, 2013). The study concluded that journalists were embracing their presence on Twitter during live sporting events but sticking with pre-Twitter routines, namely sharing information instead of interacting with fans and stakeholders. Important limitations of the exploratory study inform this dissertation as follows: (1) a delineation of type of journalist was not initially used that is important when studying how various journalists use Twitter (2) thematic elements were noted without comparisons to types of journalist or time and (3) longitudinal data was unavailable. Given recent concern that journalists are increasingly likely to forego information sharing and join ambient journalism as a participant, not a creator, in news (Poynter, 2013), a longitudinal study

is needed, then, to show whether such concerns are valid, whether journalists are shifting their professional duties in the real-time news environment online as time has gone by, whether journalist tweeting behavior changes during an event as professional duties shift over the course of an event, and whether pressure from fans and other second screen stakeholders has instead shifted journalist tweets to ensure presence rather than gatekeeping over an event's main story lines.

The news ecology model based on institutional theory and the notion of mimicry via Boczkowski's (2010) assertion regarding online journalism surveillance are the theoretical frameworks for this study. Institutional theory asserts that there are institutional norms and routines establishing a journalist's professional duties. However, there are instrumental behaviors, such as social media use, that may gain enough traction to alter institutional frameworks within a profession. Lowrey (2011) noted that blogs, for example, have altered the journalist's professional constraints in a step toward removing an editorial gatekeeper and maintaining credibility in the digital media landscape. Research indicates that social media also has altered journalist professional duties, yet longitudinally, what is unknown is whether the institutional pull has altered journalist professional duties to the extent that they are no longer reporting in the same way in interactive media. Thus, the news ecology model, wherein journalists move within their profession as members of a larger institution, while gravitating simultaneously toward new instruments to enhance their job duties, provides a framework through which to study tweeting behavior over time.

Content analysis as well as a qualitative tweet analysis will assess journalists' microblogging behaviors during the televised race. Content analysis is a common form of studying social media posts such as tweets (Lewis, Zamith & Hermida, 2013), as tweets are

primary documents. They are the real-moment public posts that are used to convey meaning. A raw, unedited real-time Twitter stream allows for understanding the moment-by-moment fluid communication that the medium encourages. Twitter feed data is imperfect due to fluctuations in Twitter's feed algorithms that make tweets available to viewers, yet content analysis is a reliable method for gleaning an accurate Twitter stream surrounding an event (Lewis, Zamith & Hermida, 2013). Thus, this study will use live tweet gathering by copying tweets as soon as they are shared in real time. The data will therefore be as close to original online communication as possible.

Significance of Dissertation

There are four theoretical and practical applications that this dissertation makes to the still-emerging conversation about the movement of print journalists online. First, there is little research regarding a longitudinal shift of journalists in their reporting behaviors in the digital era. This dissertation's main outcome is to provide longitudinal data demonstrating shifts in reporting behaviors for journalists after three years of instrumental use of Twitter during live televised sporting events, which has been implied, but not demonstrated via empirical evidence. Exploratory studies have already demonstrated that journalists are using Twitter on a daily basis as part of their professional duties, but longitudinal information is still in nascent stages. This is in part due to the recency of Twitter as an accepted medium within journalism, and thus a second significant aspect of this dissertation is to add research data to how journalists have possibly become more comfortable with Twitter and learned what types of tweets they should post or what tweets have garnered response or required rephrasing.

A third contribution this dissertation makes is to address contextual elements of the nascent second screen phenomenon, which is growing exponentially and is billed as the future of

televised media consumption. Second screen has continued to be seen as primarily a fan's domain in popular research, yet journalists participate (Emmons & Butler, 2013). Adding journalists to the second screen conversation is understudied and also ties to the other contributions of the dissertation in that the ongoing live conversations emerging from second screen research demonstrate that the real-time conversations drive the main takeaways from an event. Thus, the second screen is unique for journalists in that while they can share insights while they are reporting at an event, there is not a concurrent large audience of viewers also commenting about the event. This makes the second screen experience unique for Twitter because there is one focal point that all parties are seeing at the same time. While journalists present at an event are seeing what is happening on the track, they also have access to the televised broadcast through which to engage with other stakeholders.

Fourth, this dissertation extends Lowrey's (2011) news ecology model from a one-time event to an affirmation of the theory's premise in longitudinal instrumental use adoption toward an institutional routine. In other words, the model suggests that longitudinally, there will be a way that journalists "do" Twitter, and such norms and routines will be embedded within the profession. While the Emmons and Butler (2013) study addressed that traditional journalists were most often sharing information, what is not known is if such trends hold shape over time, as Twitter as a medium matures and journalists adjust their daily professional duties within and around Twitter.

Overview of Dissertation

This introductory chapter addresses the background, overview, purpose and significance of this dissertation. The dissertation will then continue with a literature review of pertinent theoretical developments in institutional theory in the first part of Chapter 2, followed by a

review of Twitter as a sports journalist tool and the history and present state of second screen live sporting event online communication. Chapter 3 will then introduce content analysis as the pertinent method for this study of sports journalists, with an explanation of establishing content categories for counting and categorizing tweets. Then, in order to establish other parameters during a live sporting event, a qualitative review of the tweets provides contextual insight into how journalists are using Twitter by reviewing the empirical patterns. Chapter 4 will include the results of the content analysis, with both a quantitative component, including frequencies and cross tabulations of journalist tweets over the three year race period, as well as a qualitative inspection of any context of the tweets as they occurred. Chapter 5 extrapolates the findings into possible directions for future research, discusses limitations of the study, and offers theoretical and practical insights into the field of sports journalism in the Twitter era.

In sum, this dissertation looks to move social media discussions forward in the area of sports journalist live-tweeting as an instrumental behavior that has shifted toward an institutional routine. The dissertation then discusses the implications through three separate years of data surrounding the mega sporting event that is the Daytona 500. Finally, the impact that the findings hold in light of movement toward a constant breaking news sharing cycle will be considered as a platform for future studies of journalism transformation.

Chapter 2: Review of Literature

The review of literature is subdivided into two parts. The first part establishes the theoretical underpinnings of institutional theory and the news ecology model, which establishes the institution of journalism and its established routines, how technological advancements, including Twitter, have disrupted or adjusted some of those routines, and how the eventual possible stabilization of Twitter use as a journalist routine may alter some established institutional tenets of the profession. The second part of the review of literature establishes the technological standpoints of Twitter as a medium of choice for sports journalists. The second part of the review of literature then explains second screen and the changing consumption of live sporting events by all stakeholders, including audiences at home and at events, journalists, and sports organizations and their entities, which offers the framework through which sports journalists find themselves as members of the ambient journalism era.

Part One: Institutional Theory, Changing Journalism Industry, Journalist Mimicry

Routines and professional duties within an organization, such as a news agency, tend to result from adaptation to institutional-level influences; new practices and routines are more likely to be adopted based on following strong organizational ties, namely other news agencies (Lowrey, 2011). Institutional theory asserts that organizations work within routines that tend to shape the behaviors of the professionals within the organization, and that routines become so entrenched into daily practices that they are normalized into the organizational structure. Decisions regarding journalist activities tend to fall into homogeneous patterns as journalists follow conventions placed upon them by institutional constraints (Soloski, 1989). Institutional

theory asserts that there is flexibility within institutions, making it possible for them to shift to changing social norms (Lowrey, 2011). Institutional theory, based on Weberian notions of organizational routines that shape individual behaviors within groups, has been used widely in considering the altered professional landscape of journalists. It has been used to explain the organizational decisions for individual journalists to blog (Lowrey & Mackay, 2008) and for broadcast journalists' changing reporting behavior during severe weather (Emmons & Lowrey, 2013). There are numerous unwritten but understood "rules" within institutional journalism, including knowing an editor usually vets a story, an employer is an important sponsor of a story via the space allowed online and within an publication, and that money is tied to the journalist's participation in the information sharing process. These aspects are important in considering how an institution-level pressure can add unseen but felt pressure to behave a certain way professionally.

Institutional theory's allowance for elasticity in routines in response to external constraints is a critical factor in its explanatory power for instrumental journalist use of SNS. One crucial example of the instrumental flexibility is the noted shift journalists have undertaken with the expectation in the interactive online domain that news organizations make information instantly available (Jones, 2010). Consumers have gravitated in the online era toward sharing information on social network sites (SNS), and thus organizations saw the need have an SNS presence in order to draw consumer traffic and offer news where consumers were. Some consumers turned their information sharing tendencies into blogging, which became a competitor with print journalism for readers, causing some journalists to have blogs of their own in order to remain relevant in the digital era (Lowrey & Mackay, 2008). Blogging as journalism institution shares some common ground with using SNS as relevance of the journalism profession continues

to evolve, and bodes comparison in the sense that journalists seem to have acknowledged that the print-only or broadcast-only paradigm is no longer viable after the Web 2.0. In fact, a November 2013 Neiman Lab article asks the question, “When does a mass medium no longer become ‘mass,’” in regards to the precipitous decline of print journalism (Neiman, 2013) as print increasingly becomes online, instantaneous journalism. The tendency of journalists to create their own Facebook page or Twitter account has thus, in part, occurred to address this paradigm shift, though this practice is arguably not institutionalized yet; SNS use serves as an instrument for viewership and legitimacy that may shift toward institutionalization if the practice demonstrates success (Lowrey, 2011). Journalists have established that they need to be online in order to report stories in a timely manner, and SNS use enables readers to become aware of stories, as well as engage with journalists in real time regarding the events they are reporting.

The trend for journalists to microblog during events is an increasing instrumental practice that has followed consumers, in part because Western journalism is, at its core, a business (Schudson, 2003), and journalists must engage their consumers, who are increasingly online. Key tenets of legitimacy in the SNS journalism domain are that speed and accuracy are crucial, which raises information validity questions (Sanderson & Hambrick, 2012). News organizations are still finding their way in this instantaneous sharing environment. Specifically addressing sports journalism, ESPN’s policy to not tweet information until it has been vetted by the TV news desk has caused controversy in that individual reporters have been stifled from tweeting breaking news by the network (Fry, 2012). ESPN’s Chris Broussard was criticized for calling two tweets he made “breaking news” when the information had already been tweeted by others, due in part to ESPN’s policy (Fry, 2012). A tension between institutional control and individual

journalist identity is seen as sports journalists seek Twitter followers but feel organizational constraints.

One way that instrumental uses are developed within professions is when a perceived credible “other” engages in a new behavior and demonstrates success. Such was the case with blogs (Lowrey & Mackay, 2008), and with online journalism, such as the Mante T’eo breaking story reported by *Deadspin* journalists that received international coverage (Liebler & Moritz, 2013). Thus, the movement to SNS has, in part, been caused by competitor surveillance. Journalists are tempted to check one another’s work to make sure they are reporting the latest news, and this practice has manifested itself in the surveillance of fellow journalists (Boczkowski, 2010).

Once surveillance reveals perceived success, journalists engage in mimicry (Boczkowski, 2010). Boczkowski (2010) observed the tendency for journalists to resort to mimicry when scanning the Internet for news stories and while monitoring news competition in order to maintain control of breaking information. When breaking news hits, there is little time to investigate the nuances of the story before readers see the online links, sometimes via SNS and sometimes via breaking news on online news sites, and the clicking begins. Clicks mean Web traffic, which all news sites crave, as the more clicks a site receives, the more potential advertising revenue sites can generate. Also, the competitive spirit that journalists have to be the first person to get the story, or be a leader in the dissemination of the story, leads journalists to surveillance to make sure they are on top of the news. While surveillance is essentially spying on the competition, some online journalists admit the practice, noting that some news, such as live sporting events, has become a generic commodity, similar across news sites (Boczkowski, 2010).

Sports journalists, in fact, noted that their main use of Twitter was as a competitor surveillance tool (Strudler, 2012).

Breaking news content attracts visitors to Twitter because consumers want the latest information; differentiation in the way breaking news is reported is not salient for consumers as basic factual information will usually not be different among journalists (Boczkowski, 2010). Lowrey (2011) likewise noted that the heightened visibility of news on the Internet has suggested an increase in journalists monitoring what other journalists are covering as news. Journalists also have been shown to self-correct their reporting choices to maintain adherence to mainstream information dissemination and to make sure they are on top of important stories (Schudson, 2003). Such a phenomenon has been called “pack journalism,” in that legitimacy has been linked to journalists who report similarly to other journalists, both for legitimacy and credibility reasons (Crouse, 2003; Dunwoody, 1997). Perceived credible “others” in journalism, i.e. those with long-term careers in the profession or those from perceived stalwart journalism groups such as *The New York Times*, along with local competitors and peers in the profession, are fodder for comparison via surveillance and subsequent mimicry.

Mimicry can also be influenced by the variable of time, which news gathering and reporting is directly influenced by. Reich (2011) noted that news outlets use similar sources, sometimes due to institutional constraints, resulting in similar stories. This practice can easily translate to SNS because there is one platform, such as Twitter, where journalists congregate to provide content to meet the consumption needs of an audience. Mimicking the news competition is not necessarily a new phenomenon, Boczkowski (2010) argues, but it can be blatant online, where stories are readily observable in online news feeds. This is termed a “scopic” focus,

wherein journalists can view competitive news stories more clearly than in the past, via the hypervisibility of the Internet (Boczkowski, 2010).

With such mimicry tendencies, journalists may find themselves lost in a sea of sameness. While institutional constraints suggest mimicry and sameness for credibility, in the online era, becoming a unique voice is likewise valued. Thus, there are competing pressures for journalists. Some journalists have responded by attempting to become a lone voice in an area of expertise, or by using different tactics such as opinion or analysis of news in addition to reporting-only duties. Such instrumental behaviors lie in contrast with institutional constraints, and suggest a possible ulterior motive – the desire for journalists to be individually responsible for their professions; in essence, become brands unto themselves.

Journalist as Brand

Journalists are under considerable pressure to address their shrinking field and maintain professional legitimacy through an online presence (Singer, 2006). While mimicry is one outcome of online reporting, others have argued that the ultimate outcome is actually inevitably the need for media organizations and journalists to become brands unto themselves. Traditional news organizations are facing the harsh realities of decreased profits or consolidation due to decreased readership (Mitchell & Rosentiel, 2012). While the industry struggles with uncertainty, new paradigms are being explored (Chan-Olmsted, 2004), and technology is one low-cost way to develop and maintain a media brand (Siegert, Gerth & Rademacher, 2011). New media technologies have provided opportunities for shifting journalist reporting behaviors, such as blogging (Lowrey & Mackay, 2008) to give online visibility. Blogging and other online activities that supplement traditional journalist endeavors provide a key benefit to financially-

strapped media organizations: a way to maintain a visible brand identity with the public using the low-investment technology of the Internet.

The journalist movement to the Internet also has an individual-level side effect: the journalists themselves are using the Internet as both information-sharing medium and marketing medium (Siegert, Gerth & Rademacher, 2011). Siegert, Gerth and Rademacher (2011) constructed the media, brand, actor and communication (MBAC) model based on Aaker's (1996) branding research to study organizational brand development behaviors at the corporate (media company) and outlet (single media unit) level (Siegert, Gerth & Rademacher, 2011). To date, the MBAC model has not been applied at the individual journalist level as noted in currently published research, but the model demonstrates that within media organizations, pressure to assert branding techniques has penetrated the profession. It is a likely correlation that such branding pressures filter to the individual journalist. Thus, the concept of journalist as brand is noted as it relates to three brand functions as articulated by Aaker (1996): brand identity, brand position, and brand image and reputation. Journalists have used SNS to engage in such behaviors, as can be seen on Twitter, for example. Journalists can use Twitter to maintain their brand identity by demonstrating who they are via their tweets; they can assert their brand position by Twitter activity showing differentiation among competition (Aaker, 1996), leading to a personal brand image as interpreted by consumers (Chan-Olmsted, as cited in Siegert, Gerth & Rademacher, 2011).

Sports journalists admit the pressure to become individual brands via SNS communication, yet simultaneously enjoy fan interaction and the added vehicle for media visibility that SNS provide (Fry, 2012). Sports journalists note that via Twitter, they can use their off-the-job downtime to develop personal relationships with followers, building brands for

themselves (Fry, 2012). Football beat reporters have noted that even on the job, during games, they engage with fans (Roberts & Emmons, 2013). Observationally, there are already many arguable cases of sports journalists as brands. One example is FOX Sports reporter Erin Andrews, given her Twitter following of 1.2 million in 2012, Facebook fan page, personal Web site and selected sponsorships and celebrity appearances, such as charity events, reality show *Dancing with the Stars*, partnership with EA Sports for video game voiceovers, and the Oscars (Watson, 2012). Interestingly, as of 2014 Andrews' Twitter followers are up to 2.4 million. Like Andrews, who moved from ESPN to FOX as a career shift, in uncertain times, journalists looking for job security might turn to self-branding in order to maintain relevance in an altered media landscape, and such self-branding includes using SNS such as Twitter. Such self-branding adds needed credibility and legitimacy in a shifting media profession (Siegert, Gerth & Rademacher, 2011). There is evidence that individual online brand development has benefits (Labreque, Markos & Milne, 2011) as audiences engage with journalists online and deem them more credible due to their presence there. As sports journalists still hold agency as the gatekeepers of sports news, a unique trait that SNS, and in this case Twitter, followers value (Sheffer & Schultz, 2010), they can use this agency in brand development. SNS or specifically Twitter-unique reporting variance might include the options of embedded photos or personal opinions about a story (Dickerson, 2008). These new capabilities of reporting in the interactive online era offer easier brand development due to lightened institutional constraints in such a profession of uncertainty. Thus, as institutional theory explains, instrumental uses can alter institutional constraints as shifting norms lead to new paradigms and new routines, after time themselves becoming institutionalized. An uncertainty at this time is whether SNS use will be

institutionalized mimicking pre-Twitter attributes, or if journalist self-branding will become more prominent.

Bloggers

Bloggers are a relatively new development in journalism history but have established a presence in the online domain in the last decade (Lowrey & Mackay, 2008). Bloggers are a varied group consisting of seasoned professional journalists, new journalists, or hobbyists. Bloggers need not have any experience in the fields they wish to write about, yet their credibility is quickly assessed by readers and their legitimacy has tended to be established based on their knowledge, writing ability, following, affiliation, and longevity (Weerkamp & Rijke, 2012; Yang, 2007). Social media have opened new avenues for bloggers in that they can promote their blogs by linking to them or talking about them. Twitter is one avenue for bloggers, like journalists, to potentially build a following. As institutional constraints do not necessarily apply to bloggers, they are freer to write as they please. Yet it is the lack of institutional constraint that also inhibits bloggers' inherent credibility, and thus their tweets would likely need to be insightful yet not routine or homogeneous. As Whiteside, Yu and Hardin (2012) noted, bloggers write with less context and naturally write toward "different standards" that sometimes come with the knowledge that they are not traditional journalists in the organizational affiliation sense. Bloggers are thus included in this study to compare their Twitter usage with traditional journalists to assess constraints and surveillance as variables in tweeting behavior. Likewise, bloggers have noted increased visibility in online news dissemination and thus are worthy for study in modern journalism (Whiteside, Yu & Hardin, 2012).

Part Two: Twitter and Second Screen

Twitter

Twitter is an SNS that allows users to post microblogs, called tweets, of 140 characters or less. Twitter began in 2006 with the tagline, “Follow Your Interests,” and although the site allows users to have privacy settings, the site functions well with public accounts. It is important to discern how Twitter differs from other SNS such as Facebook in considering its role in journalist use. While Facebook initially allowed relationship building on its site based on established in-person relationships, Twitter allowed “following” of another person’s account based on the simple click of a button, regardless of prior known relationship. Thus, from the beginning, Twitter encouraged engaging with others outside the boundaries of known offline relationships. Twitter’s requirement of 140 character or less microblogs, called “tweets,” allows for more conversational interactions, as one person cannot dominate a news feed with a large amount of text, as the tweets are limited in size. Twitter additionally allows only a certain number of tweets at any given time, thus requiring users to curtail constant tweeting and allow for multiple contributions in the news feed at any given time. An attractive feature of Twitter is its publicness, which makes it ideal for journalism, wherein journalists can be easily found by interested audiences, and in turn can find one another, giving credence to Boczkowski’s notion of surveillance. Twitter’s publicness and its forced conversational features make it an instantaneous sharing environment, wherein information can be shared and built upon in a stream-like fashion, with snippets of information building on one another, as in a developing story (Emmons & Butler, 2013). Thus, the medium, in a sense, supports some attributes of journalist pre-Twitter information gathering behavior, and thus can be an easier shift for the journalist in considering reporting strategies in SNS.

In sports journalism specifically, Twitter has been an attractive SNS to adopt as it supports many of the aforementioned aspects of sports reporting. Sports reporters are usually covering live events, where a developing storyline evolves over time and builds on itself quickly as new information becomes available. There is a natural draw to Twitter by fans and other stakeholders, and thus there is a willing audience already awaiting a journalist's musings. Researchers studying the shifts in sports journalism have noticed Twitter's adoption by sports journalists and the sports community as a whole, and it has been a popular research topic as demonstrated in prior research into a myriad of interactions with favorite sports players, sports celebrities, fans, and media personnel (Clavio & Kian, 2010; Hambrick, Simmon, Greenhalgh, & Greenwell, 2010; Kassing & Sanderson, 2010). Morris, Counts, Roseway, Hoff and Schwartz (2012) note that Twitter users appreciate the real-time topic information available on the microblog stream, particularly because Twitter can outpace traditional media, which is crucial in sports journalism where aspects of the action are constantly in flux.

Recent studies have indeed demonstrated that sports journalists, like other journalists, are using Twitter as part of their professional duties (Jones, 2010; Sanderson & Hambrick, 2012; Schultz & Sheffer, 2010; Sheffer & Schultz, 2010; Strudler, 2012). In general, news outlets seem to have shifted to SNS such as Twitter in order to maintain legitimacy in news dissemination (Scott, 2008), but also have demonstrated several other reasons for using it. Sports journalists have been found to use Twitter for breaking news, such as a live sporting event (Jones, 2010; Sheffer & Schultz, 2010) and also to generate story ideas and find quotes (Strudler, 2012). Opinion-sharing was found to be a seldom-used feature in these initial Twitter-use studies, while redirecting followers to work on traditional outlets was a second important feature (Sheffer & Schultz, 2010). Sanderson and Hambrick (2012) studied journalists' uses of Twitter in response

to the Penn State scandal and found criticism and commentary to be main components of many tweets, veering from objectivity. Tellingly, however, and as to be expected with a new medium, research has been extensive at the exploratory phase yet has not moved beyond it yet. An important unanswered question is whether sports journalist Twitter use has shifted now that the medium is moving from instrumental use to institutional routine in its adoption.

Another consideration for Twitter as journalist study subject pertains to its democratization possibility within the institution. In other words, any journalist with any amount of professional experience or even hobby interest can create a Twitter account and declare herself or himself worthy of following. Since Twitter is in its nascent stages as a journalist tool, studies are still emerging as to just how democratic Twitter really is for journalists. McEnnis (2013) noted that there was a perceived democratization of Twitter by professional sports journalists, who thus attempted to differentiate themselves with context and commentary when they were beyond the breaking news moments. The study, however, did not consider live events, rather overall trends on Twitter. Hardin and Ash (2011) likewise found more context in professional journalism blogs, but this likewise did not address the rush of live Twitter use, wherein time is a crucial variable permitting fleeting consideration beyond the now. At a more base level, however, it is important to note that Twitter itself aggregates and disseminates tweets in a timeline based on an algorithm of what it believes is most worthy for a follower to see. More influential Twitter users, such as professional journalists, would likely be deemed via Twitter's algorithm to be viewed in a feed rather than bloggers, with probably fewer followers. Such variables are important to consider both for contextualizing what tweets are sent by bloggers and professional journalists in the sense that perhaps bloggers would feel the need to be more

salacious to be retweeted and seen by the masses, or perhaps professional journalists feel a similar pull to remain influential.

Second Screen

The concept of watching television and using a secondary communication device, such as a phone or personal computer, to converse with others about what was happening on television has been around since the advent of said devices. The popularity of social media, along with a concurrent advent of mobile communication devices that could fit on laps or armrests, made virtual social interaction while watching television take off. Social TV, then, is not a new idea. The specific “second screen” concept ignited in 2011, according to social media watchdog *Mashable*, when *Grey’s Anatomy Sync* was developed for the iPad (Warren, 2013) and several awards shows, such as the Oscars, used second screen opportunities on various platforms, mostly apps and Twitter, anticipating social chatter for the red carpet and award presentations. Noting the movement of audiences online, several second screen apps have been developed between 2011-2014, with some already on decline and others gaining market share (Warren, 2013). *Viggle*, for example, is a popular second screen app with a partnership with satellite television provider DirecTV, and *Zeebox* has leveraged relationships with broadcast companies such as Telemundo, NBC Universal, and Home Box Office to gain traffic to its mobile second screen app (Lawler, 2012). In 2014, *Zeebox* was relaunched as *Beamly*, in part to lose what it said was a “male geek” image and become a more holistic social TV/second screen app (Dredge, 2014).

Interestingly, to date, while several second screen apps have attempted to gain a foothold in the growing social TV phenomenon, none has overtaken Twitter, which continues to be the market leader in second screen usage during events both live and recorded (Thielman, 2013). The most prominent reasons for Twitter’s popularity over apps in the fledgling second screen era

include the lack of desire by consumers to switch among apps for television and other social sharing (Ary, 2013), Twitter's short communication style built for quick view during commercials and, more likely, while following on-screen action and wanting instant communication with others (Crupi, 2013). Also, and important for this study, Twitter has garnered legitimacy by the presence of credible information sharers such as journalists and company stakeholders (Lasorsa, Lewis & Holton, 2012). Such opinion and information influencers make a difference when fans are considering a holistic second screen experience.

Public relations practitioners are just beginning to notice the second screen opportunities of being present online during events, notably live sporting events and other live broadcasts (Fiala, 2013). Likewise, fans have gathered on Twitter during events (Kassing & Sanderson, 2010). Television stars, such as the Robertsons from reality television's *Duck Dynasty*, are known to use Twitter to engage the viewing audience during airings of their shows (Laporte, 2013) and therefore generate buzz on two media at once: television and Twitter.

While recorded events might yield occasional journalist Twitter chatter, combining a live event with journalist tweeting and social gathering place causes a fascinating dynamic to emerge: Twitter becomes a virtual meeting place for all stakeholders during a live event that is more dynamic than any in-person or static (passive) viewing event. Live sporting events in particular are ideal for second screen meet-ups on Twitter (Emmons & Butler, 2012). Fans often go to social media as a type of community experience (Butler & Emmons, 2012) and also want to learn statistics and performance information as a sporting event progresses. Since sports journalists are also congregating online to report live, they are naturally engaging with fans who query them or respond to their observations. Thus, a unique amalgamated communication environment results – journalists do their jobs, yet receive immediate feedback from fans or

questions, and reply while continuing to report the event. What is suggested but still unknown is how journalist reporting behaviors might be altered in this interactive, immediate environment. It is known that journalists are online, are all but expected to have a Twitter presence, and are interacting in a communication environment wherein immediate feedback for reporting is ongoing. This raises several important questions for how sports journalists might be evolving their live reporting due to Twitter. Preliminary research has suggested both that journalists have stuck to pre-Twitter behaviors of information sharing and interviewing (Emmons & Butler, 2013) and, contradictorily, that journalists are sharing opinions more often (Lasorsa, Lewis & Holton, 2012). It is possible that both are true, considering that Twitter has not been routinized throughout the journalism profession (Lowrey, 2011) and journalists are still adapting to this new medium.

This research thus addresses the current void in research regarding the marriage of not just journalist routine evolution in the social media era but also how other concurrent participating factors (e.g. fan interaction, PR responses, competitor tweets) might alter journalist tweeting choices. As Hermida (2011) noted, the journalism profession has not adequately addressed the implications of an always engaged and interactive communication audience in the constant, ambient flow of information online. Further, Poynter noted during a journalist ethics workshop that too many journalist tweets from a live feed during the 2013 Video Music Awards were direct responses to singer Miley Cyrus' controversial stage performance rather than more substantive, informative tweets (Angelotti & McBride, 2013). Those in attendance noted that journalists, in this instance, tweeted no differently than other non-journalist members of Twitter-verse, which raises questions about journalists as proactive information sharers or reactive members of a conversing crowd (Angelotti & McBride, 2013). It is in this uncertain

social/professional space that journalists find themselves. Thus, the foundational communication tenets that journalists have traditionally based their reporting behaviors could potentially be, and might already be, altered by interactive live communication. Whereas a more static, one-way communication model allows journalists more control over the message, modern tweeting journalists might not have as much control over message development and content as they think they do. This research, then, aims to discern patterns over a three-year analysis of live tweets during NASCAR's Daytona 500 to determine what trends are emerging in journalist tweeting behavior. As information sharing in ambient journalism is more horizontal than vertical (Hermida, 2011), the journalist's role in it is still emerging, yet vital to understand.

Research Questions and Hypotheses

Journalists have demonstrated that they use Twitter for instrumental behaviors such as tweeting during sporting events as part of their shifting job responsibilities ("Social media," 2012). Twitter's use as an interest-based SNS along with its appeal on mobile applications makes it an attractive SNS choice for live microblogging. Sports journalists need to tweet live during events: evidence suggests it is becoming a sign of negligence or lack of legitimacy to not be present on Twitter during breaking news events (Sanderson & Hambrick, 2012). Previous research thus far has addressed what sports journalists are tweeting during live televised events, yet longitudinally there have been few patterns or shifts over time noted. However, observational evidence from Roberts and Emmons (2013) research suggests that football beat writers, while still informing the public via their tweets, have also spent considerable time offering commentary and analysis during live action. This adds credence to Poynter's notion that journalists are less concerned with objectivity than they are relevance. Given these considerations, non-institutional journalists would feel greater pressure to be present during the live action of a sporting event.

Their lack of institutional commitment will also allow greater flexibility to be more present on Twitter than juggling other needs such as thinking about a deadline story or making commentary.

Thus, the first hypothesis states:

H₁: Bloggers from non-institutional backgrounds will tweet at a significantly higher frequency than institutional journalists.

The independent variable for this hypothesis is the type of journalist. The dependent variable is the frequency of tweets.

It is predicted that institutionalization of professional journalists' Twitter practices will be evident during live sports broadcasts like the Daytona 500. Based on the institutional constraints that journalists find themselves working within, however, their tweeting behavior will demonstrate homogeneity because of pack journalism tendencies. Two prior studies (Emmons & Butler, 2013; Roberts & Emmons, 2013) have shown mimicry tendencies among print and online-only journalists, or those journalists who write content that appears only on the Web and do not have other media through which their content appears. There was not a similar mimicry tendency among television or radio journalists. Such analysis was noted in 2012, but there has not been additional evidence to suggest that television or radio broadcasters have assimilated toward print and online-only journalists. The following hypothesis, then, is based on prior findings and on the theoretical framework of mimicry, also called isomorphism or sameness, via institutional theory:

H₂: Bloggers from non-institutional backgrounds will significantly tweet about different themes than institutional journalists.

The journalists are the independent variables for this hypothesis, and the tweeting themes are the dependent variables.

The active engagement in Twitter during a live race presents more opportunities for mimicry than for television and radio broadcasters, since print and online-only journalists are viewing the news feed more directly due to the altered time constraints of their during-race duties. Thus, a third hypothesis addressing this mimicry ability addresses this:

H₃: As time passes (from year to year), the majority of all journalists will significantly increase their frequency of tweets.

The independent variables for this hypothesis are the journalists and the tweet year, and the dependent variable is the tweet frequency.

Institutional theory and branding theory offer contradictory pulls for considering the tweeting behavior of journalists. Institutional theory suggests that journalists will be more likely to become homogeneous in their tweeting behavior as the instrumental behavior becomes formulaic in terms of a proper way for it to be done. Yet, branding theory asserts that journalists must be unique in order to individualize themselves in a cacophony of voices in a democratized Twitter feed. Thus, two research questions are offered to discern this conflict of theory:

RQ_{1a}: As time passes (from year to year), will print and online institutional journalists demonstrate increased Twitter reporting tendencies during the Daytona 500?

RQ_{1b}: As time passes (from year to year), will radio and television journalists demonstrate increased Twitter reporting tendencies during the Daytona 500?

RQ_{2a}: As times passes (from year to year), will print and online broadcasters demonstrate more homogeneous Twitter reporting tendencies during the Daytona 500?

RQ_{2b}: As time passes (from year to year), will television and radio broadcasters demonstrate more homogeneous Twitter reporting tendencies during the Daytona 500?

In both research questions the independent variables are the journalists and the years, and the dependent variables are the tweet categories.

Because fans follow sports journalists on Twitter, they will inevitably interact with them. Legitimacy tends to be established in part via the affiliation with a known news agency for some journalists (e.g., FOX Sports, ESPN, *Sports Illustrated* staff). Reporters without this built-in legitimacy will therefore use their brand platforms on Twitter to engage fans, offering legitimacy via their insider knowledge of the race. Preliminary research from Roberts and Emmons (2013) suggests, however, that interaction with fans seems to fragment based on length of time in the industry. Journalists who have been in their profession longer, and are therefore more entrenched in the established institutional routines, are less adapted to the new live tweeting aspect. Further, journalists who have been in their profession longer likewise have followings already, and therefore do not feel the pull that newer journalists have to maintain relationships with audiences in order to appease them. It is still uncertain if length of time in professional journalism is a variable in the amount of tweets. Preliminary research does not denote whether journalists with more professional experience will have more or fewer tweets compared with journalists with less professional experience. Though institutional theory suggests that journalists with more professional experience will tweet less as the institutional constraints have been ingrained longer, research by Roberts and Emmons (2013) was inconclusive. Thus, the fourth hypothesis addresses this notion:

H₄: There will be a negative relationship between years of professional journalism experience and the frequency of tweets by institutional journalists.

In this hypothesis, the independent variables are the journalist and the dependent variable is the tweet frequency.

Similarly, journalists who have been in the profession longer, via professional constraints, will likely continue their honed practice of reporting information only, such as race statistics and quotes. Journalists with less experience may not necessarily adhere to these constraints, as institutional norms have not permeated their online practices to the same extent. For the purposes of this study, the operational definition of “veteran” journalist is defined as one who has been in professional journalism longer than half of the institutional journalists in the data set. A fifth hypothesis addresses this potential dichotomy:

H₅: Tweets from veteran institutional journalists will be significantly thematically different than tweets from less established institutional journalists.

The independent variable in this hypothesis is the journalist, and the dependent variable is the tweet theme.

As journalists have the unique Twitter medium through which to enhance brand development, one aspect of this development is via photo sharing (Dickerson, 2008). Twitter is a medium that allows important alternate ways to demonstrate journalist legitimacy while simultaneously demonstrating individual brand decisions; photos are shown to be a visual reminder of presence at key news events (Dickerson, 2008; Lee, 2014). Dickerson (2008) asserts that photos shared on Twitter demonstrate an exciting personalized journalist experience at a major news event, asserting individuality while news sharing. Lee (2014) noted that journalists have begun to notice that photo sharing gains the most retweets of any new tweets, garnering followings and boosting credibility. The photo-sharing ability that Twitter allows creates an additional proof of legitimacy of the journalist’s unique access and therefore professional credibility by her or his presence at a sporting event. An important delineation between bloggers and institutional journalists, then, would be photo sharing, as bloggers are not necessarily at the

track and therefore less likely to include visuals in their tweets. Thus, the sixth hypothesis is subdivided into two parts as follows:

H_{6a}: Journalists will tweet photos as much as the Twitter average for the general population to demonstrate their personal experience at a live sporting event.

H_{6b}: More institutional journalists than bloggers will share photos.

Another aspect of Twitter use that is still in its early discovery phase relates to the timing of tweets and how journalists balance Twitter presence with pre-Twitter reporting and writing duties. Roberts and Emmons (2013) learned from sport beat writer interviews that Twitter use tends to slow as a live sporting event draws to a close because story lines begin to emerge and journalists shift their thoughts to the print product they must produce outside of their ancillary social media duties. To cross-compare with NASCAR, caution laps are downtimes during races, and thus are a chance for journalists to move toward online interaction instead of their other job duties. To test this likelihood, the seventh hypothesis states:

H₇: Institutional journalists will tweet more often during cautions than green flag racing.

As Twitter matures as a legitimate medium for journalism use, content analyses will continue to evolve to demonstrate what exactly journalists are sharing. Over the course of three years of tweets, popular categories that emerge offer important fodder for what institutional journalists and bloggers choose to share. Thus two research questions consider:

RQ₃: What are the most popular themes within blogger tweets during the Daytona 500?

RQ₄: What are the most popular themes within institutional journalist tweets during the Daytona 500?

Given the institutional constraints that limit variances from the norm in their profession, institutional journalists have been taught that objectivity and information sharing are crucial roles

of the job. Bloggers have not been under the same professional constraints. Thus, valence of tweets is an important consideration when viewing the institutional constraints that might cause variance in tweet content. The eighth hypothesis addresses this theoretical underpinning:

H₈: Institutional journalists will be more likely to have a neutral valence in their tweets than bloggers.

Twitter's within-microblog search function, the hashtag, has been heavily promoted by NASCAR and Twitter, and thus would likely be adopted by journalists looking for a following and wanting to be seen in interested party Twitter feeds. Hashtag use would not necessarily differ based on institutional affiliation, as all journalists potentially benefit from increased visibility on Twitter's search function. Thus, the ninth hypothesis asserts:

H₉: The use of hashtags by all journalists will increase with each passing year.

After the categories were coded and the frequencies were computed and analyzed, total frequencies were divided as percentages for institutional journalists and bloggers as needed for each hypothesis or research question. For example, 69.8% of total tweets were by institutional journalists, so 69.8% of each tweet category was used as the expected frequency for each category. The actual tweet counts were used as the observed frequency. Then, chi-square analysis was used to determine significant differences between groups by using the actual tweets as observed frequencies. The frequency totals were adjusted as needed to represent institutional print and online journalists and bloggers and television/radio broadcasters and bloggers.

Spearman rho analysis was used as the correlation coefficient as it measures variables that have been ranked. As the content categories were turned into ranks (1 through 15) for each category for bloggers and institutional journalists, they were then turned into ordinal numbers that could be tested empirically via Spearman rho correlation coefficients. Thus, strength of

association between the comparison groups for the following hypotheses and research questions is based on this nonparametric measure.

Chapter 3: Method

In order to discern tweet counts to determine tweeting tendencies, tweeting patterns based on specific race events, and important context behind tweeting decisions, a mixed method approach is appropriate for this study. Mixed methods approaches are those engaging more than one type of method, either differing types of qualitative, quantitative, or a combination therein. A mixed method approach was useful in an earlier exploratory study of NASCAR journalist tweeting behavior (Emmons & Butler, 2013). Differing aspects of the hypotheses are best addressed via different methods for this research, in this case involved quantitative content analysis along with qualitative textual analysis.

Content Analysis as Mixed Method

Content analysis is a method explained by Krippendorff (1973) as an important method for understanding meaning based on the data trails left behind by the rhetor or creator of the trails, so to speak. Written communication, speeches, videography, and photography are examples of content that can be studied. Krippendorff has argued that communication can be quantified. Such quantifiable evidence as word repetition or repetition by expression can demonstrate via frequency of use or lack thereof to extrapolate themes. Other mass communication theories in part have stemmed from similar thinking, such as Goffman's (1956) framing theory, noting that meaning is crafted by rhetors for specific interpretation by choice of expression, and McCombs and Shaw's (1972) agenda setting, which notes that communication choices by mass media are the same choices that are interpreted as important by audiences.

Content analysis approaches must rely on a data set. The choice of data set and the hypotheses/research questions are the predictors, then, of which method is most effective when considering grounded theory text analysis or quantitative content analysis as the choice. As this study looks toward longitudinal information, this data is best quantified, where frequencies and cross tabulations can show trends over time and between and among groups (Krippendorff, 1973). Thus, content analysis via tweet counts, with each tweet as a unit of analysis within the data set, is the appropriate choice for this study.

However, a limitation of content analysis is that close reading and inspection of each tweet makes it difficult to discern other potential findings from the data. While quantitative results can empirically demonstrate what themes emerge from the data, the results are less appropriate for discerning other insights. For example, this study looks toward what context photos can provide, and conversations need to be “seen” to know if tweets are conversational with fans, for example, or happen during a caution. In that case, a qualitative approach allowing for a closer inspection of the tweets can reveal these possibilities. Glaser and Strauss (1967) specifically addressed the fact that one interview or one piece of data could be a clue to discerning themes that encouraged forward movement in scholarship as well. Their seminal work in grounded theory development thus offers an alternative research possibility for close readings of texts as well as discovery of underrepresented populations, outliers or marginalized groups. As grounded theory is more critical in nature, this study nods to grounded theory for the argument in favor of close inspection of data, via a qualitative content analysis as well. Thus, for the purposes of this study, a qualitative content analysis, wherein tweets are viewed one by one in relation to specific time intervals in the NASCAR race, will be used to discern tweeting behaviors as the race progresses.

Study Design and Operational Definitions

The universe of investigation for this study is the live tweets of twenty-six blogger and institutional journalists during the green flag to checkered flag Daytona 500 for three years: 2012, 2013 and 2014. The first year of tweets, 2012, demonstrates one of the first years that journalists were using Twitter as part of their job duties as indicated by research by Roberts and Emmons (2013), noting that many institutional journalists started using Twitter as an unofficial or official part of their job duties during the 2011-2012 time frame. Thus, the 2012 Daytona 500 would denote a first likely race that a Twitter presence would be expected of institutional journalists. A three year analysis would thus demonstrate two more years of use during the premiere NASCAR race, which would indicate changed tweeting behaviors over the course of a three year span, allowing time for developing habits of Twitter use and a way to “do” Twitter will have had time to emerge.

Operational definitions of institutional journalists and bloggers are required in order to delineate the variance between them, as these two types of journalists will be used as independent variables in the hypotheses and research questions. There are twenty-six journalists total. Twenty “institutional” journalists were chosen based on their known, paid professional career in journalism with a brick and mortar organization, such as FOX Sports, or online journalism organization, such as SB Nation. It is possible that these institutional journalists have written for online-exclusive content providers, such as ESPN.com, although there is also a brick and mortar ESPN studio, but the sociological underpinnings of institutional journalism as noted by institutional theory would provide the credibility, accuracy, and restraint probabilities that would inhibit significant variance in this variable for the purposes of this study. The institutional journalists in this study all have career experience prior to the Twitter era in that all have been

journalists before 2011, when Twitter was beginning to gain momentum as a journalism tool, as noted by interviews of sports reporters conducted by Roberts and Emmons (2013). As tweets could be determined to have different meaning and context given a reporter's physical presence at the race, the institutional journalists were determined to be present at the race by contacting NASCAR to find out which journalists were present at the Daytona 500. Institutional journalists for the study were first determined by eliminating locally-affiliated journalists and focusing instead on national journalism organizations. These national institutional journalists were chosen from NASCAR's list and subdivided into type, i.e. television broadcast, radio broadcast, print and online. Journalists were then randomly selected by choosing the top named twenty journalists on the list.

A blogger, for the purposes of this study, is defined as someone who tweets and reports about the Daytona 500 not as a paid employee but rather as a hobbyist or interested party not immediately affiliated with a journalist organization. The "immediate" affiliation with a news organization is crucial for this study, as blogger participation and payment are very difficult to discern without extensive research. For example, one blogger in this study, Steve Waid, was a former journalist, but he was not an official employee of any journalism organization while tweeting throughout 2012 – 2014. Thus, immediate affiliation is operationalized to mean a direct employee/employer relationship between journalist and journalism organization. A blogger is someone that Lowrey and Mackay (2008) define as a possible shifting force in journalism, as online writings can easily gain followings and provide context and specialized information beyond constraints that institutional journalists must work within. Bloggers are thus good candidates for studies such as these because they offer a comparison point for the constraints that organization-affiliated journalists might experience. There were six bloggers identified for this

study. A blogger does not receive a salary from a media organization to produce content; rather, a blogger might have multiple motives for writing about a particular subject, but immediate payment is not the direct cause and effect for writing. Bloggers may be hobbyists, aspiring journalists, or retired journalists, and they thus would hold on to some tenets of online journalism, namely a way to find readers. Thus, bloggers would likely have a Twitter presence through which to engage an audience, and evidence from a prior Emmons and Butler (2013) study suggests that indeed, bloggers use Twitter accounts. For this study, bloggers were identified online by a Google search for NASCAR blog. The top six blogs that appeared in the Google search were then identified as indeed a blog and not a direct affiliate of a media organization. The author of the blog and the blog name were noted, and corresponding Twitter feeds were then searched for. Once the blog and the Twitter feed were matched via identifying profile information and a review that the tweets would match the blog on generic subject matter (such as mentioning NASCAR or mentioning the blog), the Twitter feeds were determined to be legitimate.

For hypotheses comparing “veteran” and “younger” journalist tweeting behavior, operational definitions of these journalists were created. This was accomplished by researching the career experience of each institutional journalist in the study and dividing the journalists into two groups based on the year entering the profession. Using LinkedIn.com and biography pages on media Web sites, all of the journalists had self-reported either via interview or resume the year they had entered the profession. “Veteran” journalists were defined as those with 22 or more years of experience. “Younger” journalists were defined as those with 21 or less years of career experience.

Procedure

Institutional and branding theories would dictate that all of the journalists, including bloggers who would want to be visible along with other journalists, would have Twitter profiles based on the instrumental use of them for legitimacy and credibility purposes (Lowrey, 2011). Indeed, all had Twitter presences.

A dummy Twitter account created specifically for this project was used as the central data collection space. The Twitter newsfeed only shows tweets from accounts that are followed by the account creator, plus advertisements, which are marked “sponsored” in the Twitter feed. Thus, the only tweets collected for the three years of analysis were those that were in the Twitter feed during the race. The tweets were pulled via screen grab between every one to every five minutes depending on the Twitter activity in real time during the race. Twitter notes during the live feed that new tweets are posted, and a number is also given, with anywhere between one and twenty tweets at a time. Thus, during heavier Twitter traffic times, tweets are presented in new batches of twenty, and in slower Twitter traffic times, tweets are presented in the smaller number as they arrive. Thus, it is possible to have lulls when there are not many tweets coming in. As tweets are pulled in real time, it is possible that tweeters might want to delete a tweet, yet this study is meant to demonstrate real-time response to live action, and thus the non-deleted tweets provide a more rich context than if the tweets were deleted. Thus, this study does not consider tweets that are later deleted, though it is important to note that tweeters are allowed to do so at any point after creating the tweet. Thus, context here is at the moment of tweeting for this study.

The unit of analysis is one tweet. One tweet is defined as one Twitter post. The independent variables for this study for all of the hypotheses and research questions are the journalists and bloggers, with variances noted in each hypothesis and research question. As

sociology theory notes, including contemporary sociologist Giddens (1984) in his operationalization of structuration theory, actors have agency within their social institutions and therefore can offer individualistic characteristics, yet within an accepted framework of the institution they represent. This agency also suggests the premises of branding theory, a main theoretical underpinning of some of the research questions and hypotheses. Also, institutional theory provides the theoretical framework that grounds a counterpoint to the branding theory and structuration theory viewpoints, which are likewise reflected in the hypotheses and research questions. The independent variables thus are the bloggers and journalists who produce the dependent variables, the output in other words, which are the tweets.

The main dependent variable will be the tweets, as their content and valence will determine the results. There are numerous live tweeting writing choices that each journalist must decide, and these decisions will result in the variance, the tweets themselves, which will demonstrate patterns and themes over the three-year study period.

Tweets are also expected to fluctuate in frequency and type depending on the time of the race. As Rowe (2010) noted, sports have a temporal quality, wherein their live performance makes sporting events fleeting in their impact as the variable of time interacts with them. It is with this notion that time is noted as an important variable in considering the participation of journalists in various media as they are involved in a mega sporting event. Thus, an independent variable in some of the hypotheses and research questions is time (year).

For the tweeting frequencies and overall longitudinal trends in tweeting behavior, a quantitative content analysis is used. Tweets will be read, categorized and counted based on their main subject matter, or theme. First, it is important to determine if a similar content analysis coding list is available from prior research. In this case, there is not a comparable second screen

content analysis coding list. Thus, relevant elements of Hambrick, et. al.'s (2010) content analysis categories assessing professional athlete tweeting tendencies is used as an initial framework. This coding list addresses some of the ways two groups of people who do not know each other but have a common interest interact with each other on Twitter. Then, categories based on a study by Sanderson and Hambrick (2012) of journalist tweeting behavior during a sports news event were added, since this study addresses journalist-specific tweeting tendencies. Finally, relevant coding categories from a survey of sports journalist Twitter use (Strudler, 2012) were added to complete the coding list. Although the survey was not a content analysis, emergent responses from the survey demonstrate some journalist insights into how they use Twitter. As these three content analyses were not NASCAR-related, categories specific to the sport were used to complete the coding list. An exploratory study of NASCAR sports journalist tweeting behavior (Emmons & Butler, 2013) determined that some content categories were redundant or not applicable, and those were removed from this study. Likewise, pertinent categories from a football beat writer content analysis (Roberts & Emmons, 2013) were added to hone the content categories.

Secondly, an analysis of tweeting behavior among the journalists during specific race moments will be used to determine homogeneity and pack journalism tendencies. Homogeneity will further be used in a close reading of tweets to denote emergent themes. Charmaz (2006) notes that constructing grounded theory is based upon a critical reading of the data in order to discern insights after its creation and is often an excellent companion to quantitative study in that it allows for close reading of data that empirical methods need for context. With grounded theory, Charmaz (2006) explains that in considering content analysis, the method is a simple, "changing of the lens," moving from aggregate inspection of data to close inspection of data. It is

with this interpretation that the qualitative portion of this study proceeds. Tweet data is matched with the television broadcast to ensure tweet-to-race consistency via text analysis of themes (Charmaz, 2006; Glaser & Strauss, 1967). Finally, photo sharing by journalists was studied via both a count of frequency of shares and by a content analysis of each photo. Since journalist brand identity likely will include Twitter-specific individual sharing opportunities such as visual storytelling, photos were used to determine possible brand development (Dickerson, 2008).

All of the tweets from the selected journalists are gathered from the drop of the initial green flag of the Daytona 500 until the conclusion of the race. The time component is critical for this study as time, particularly a caution lap versus a green flag lap, is a mediating variable. Thus, the green flag announcement on television will serve as the data gathering beginning, and one minute after the checkered flag will serve as the end of the data gathering.

Instrument

The instrument for this study is the content coding list created for this study, as explicated above. Table 3.1 shows the coding categories that are used to determine tweet type.

Table 3.1 Coding Categories for Content Analysis

<i>No.</i>	<i>Category</i>	<i>Example</i>
1	Race activity opinion	“This race is awesome.”
2	Driver opinion	“He’s racing better today.”
3	Driver Information	“Jeff Gordon is racing his fifteenth Daytona 500.”
4	Race Opinion	“I can’t believe there are no wrecks yet.”
5	Race Information	“Lap 115. Leaders about to pit.”
6	Opinion and Information	“Race at lap 115. Looking exciting!”

7	Content: link to content	“Here’s my story www.LINK.com. ”)
8	Second Screen	“FOX Sports giving analysis.”
9	Journalist	“Hey @jennafryer where are you?”
10	Retweet*	Code as retweet, then code again for type
11	Career	“I got to the track early.”
12	Fan	“In response to your question, @racefan,”
13	Other:	Any tweet with unanticipated content or off-topic
14	Source Use/Quotes	“Jimmie Johnson said, ‘Tough race.’”
15	Promotion	“Listen to our post-race show for more analysis.”

**Retweets are coded twice. They are first coded for the retweet, then coded again for the theme.*

The valence of each tweet is noted to determine overall phrasing intent of the tweet as positive, negative, or neutral. For the purposes of this study, valence is used to determine slant in tweets as positive, negative, or neutral, but collapsing the positive or negative into a “non-neutral” category could be used as well:

Valence:

- 1 Positive valence
- 2 Neutral valence
- 3 Negative valence

The nature of the race action for each tweet will determine the context for each tweet.

The timing of each tweet helps determine if there are certain times that tweets are more likely to be occurring:

Time of tweet:

- 1 Green flag

2 Caution

Coding Process and Intercoder Reliability

All tweets are qualitatively analyzed longitudinally from the beginning of the race to ensure green flag or caution laps, giving context to race events. Tweet trends were compared among tweeters across journalism platform (e.g., television, radio, print). Homogeneous reporting tendencies were assessed via both frequencies and subsequently grounded theory approach by comparing actual tweet phrasing throughout the race. Tweet-specific homogeneous reporting themes emerged via both methods and appear in the results and discussion sections that follow.

Data cleaning was done via visual tweet by tweet inspection for repeats by the researcher. Two undergraduate university students coded alongside the primary researcher to ensure intercoder reliability, and multiple researchers were assured to agree on tweet categories. A meeting with the coders along with a sample of 12.5% of the total tweets for comparison purposes was used to determine proper coding. Researcher discussion prepared all coders for the coding. Spreadsheet software was used for initial coding, and the data was imported into statistical software to run statistics, while other statistics were calculated manually, such as percentages and cross-tabulations. Intercoder reliability is used via comparison sample of 12.5% of the data via Riffe, Lacy and Fico's (2005) intercoder reliability measure.

A Cronbach's alpha used to determine intercoder reliability among three researchers who completed coding for the project demonstrated a .90 reliability factor, consistent with other content analysis studies and indicating a high level of replication ability and content category ease of understanding.

The data for the dissertation was cross-checked in three ways. The first data accuracy check was done via the Twitter aggregation site Topsy. As Twitter uses an algorithm to determine which tweets appear in a user's feed from moment to moment, this necessary cross-check ensured that as many tweets as possible were captured. Also, but to a less reliable extent, Twitter archives were checked via a Twitter user history search. In keeping with similar Twitter studies, this data gathering method was in line with rigorous data gathering using non-computer generated algorithms or Twitter's direct archive, which is not available to the public except on strictly limited requests only at this time. Finally, visiting each Twitter user's account and scrolling through the tweet history ensured, if done quickly, that all of the tweets were captured. A heavy Twitter user may not have all of the tweets appear on her or his scroll history, but a light Twitter user may have a longer history to view, and thus this method is the least reliable of the three but can be helpful for certain Twitter users. Thus, the data gathering was within scholarly parameters and produced a robust data set for examination.

Chapter Four – Results

There were 3,632 coded tweets by all journalists and bloggers in the study for the three years 2012, 2013, and 2014. This tally includes 279 retweets, which per content analysis instructions were coded twice. The tweet total for 2012 was 1,454. The tweet total for 2013 was 969. The tweet total for 2014 was 1,209. There were twenty journalists paid via a salary from traditional news organizations tweeting and six bloggers, either unpaid or paid via blog revenue, total, in the data set.

This results section extrapolates on each hypothesis in order. As the data is nominal, the results reflect chi-square and Spearman rho calculations as needed to demonstrate differences between and among bloggers and institutional journalists, with one t-test for a three-variable hypothesis. The hypotheses addressing hashtags, cautions, and visual elements of the races were studied via comparing percentages and via qualitative content analysis. The data are then explained with contextual and suggested insights in the fifth chapter.

Hypothesis 1 predicted that non-traditional journalists (bloggers) would tweet at a higher frequency than institutional journalists, from traditional organizational backgrounds. The following two tables, Table 4.1 and Table 4.2, provide data to answer this hypothesis, with the former reporting the frequency of tweets for traditional journalists and the latter reporting the frequency of tweets for bloggers.

Table 4.1

Frequency of Tweets by Year for Institutional Journalists

<i>Journalist</i>	<i>Tweets 2012</i>	<i>Tweets 2013</i>	<i>Tweets 2014</i>	<i>Total</i>
Mike Bagley MRN announcer	1	3	7	11
Steve Byrnes Fox pit reporter	10	1	0	11
Jenna Fryer Writer, Associated Press	134	76	98	308
Jeff Gluck Reporter, <i>USA Today</i>	172	41	139	352
Jeff Hammond Fox commentator	10	3	13	26
Mike Joy Fox play by play	0	0	23	23
Claire Lang Sirius/XM reporter	23	8	3	34
Dustin Long Writer, MRN.com	94	84	263	441
Larry McReynolds Fox play by play	0	0	4	4
Dave Moody MRN announcer	23	2	10	35
Chris Myers Fox commentator	0	0	5	5
David Newton Writer, ESPN.com	60	31	47	138
Bob Pockrass Writer, <i>Sporting News</i>	77	49	151	277
Pete Pistone Editor/reporter, MRN.com	35	0	29	64
Nate Ryan Writer, <i>USA Today</i>	72	50	83	205
Marty Smith Reporter/writer, ESPN.com	65	49	62	176
Wendy Venturini Fox pit reporter	39	0	2	41
Krista Voda Fox pit reporter	13	2	1	16

Darrell Waltrip Fox play by play	8	0	12	20
Matt Yocum Fox pit reporter	13	0	5	18
Totals	849	399	957	2,205

Table 4.2

Frequency of Tweets by Year for Bloggers

<i>Blogger</i>	<i>Tweets 2012</i>	<i>Tweets 2013</i>	<i>Tweets 2014</i>	<i>Total</i>
Shaun Burke Blogger, onpitroad.com	335	54	121	510
Buzz Cutler/S. Levine Blogger, now <i>NASCAR Illustrated</i>	55	89	0	144
Jayski Blogger, jayski.com	57	211	72	340
Queen Sarah Blogger, theracingqueen.com	32	0	0	32
Queers for Gears Blogger, queers4gears.com	64	207	57	328
Steve Waid Blogger, motorsportsunplugged.com	62	9	2	73
Totals	605	570	252	1,427

As the two aforementioned tables display, bloggers tweeted more frequently than their traditional journalist counterparts. The first hypothesis was tested by comparing tweet frequency averages between bloggers with journalists from institutional backgrounds. Total institutional journalist tweets (n=2,205) and blogger tweets (n=1,427) for the three-year total were averaged per tweeter. Table 4.3 shows a condensed tweet comparison including tweet average.

Table 4.3

Tweet Frequency Comparisons Between Bloggers to Institutional Journalists

<i>Year</i>	<i>Blogger Total</i>	<i>Institutional Journalist Total</i>	<i>Tweet Total</i>
2012	605 (100.8 avg.)	849 (49.9 avg.)	1,454 (55.9 avg.)
2013	570 (114.0 avg.)	399 (30.6 avg.)	969 (37.2 avg.)
2014	252 (63.0 avg.)	957 (50.3 avg.)	1,209 (46.5 avg.)
Total	1,427 (237.8 avg.)	2,205 (110.2 avg.)	3,632 (139.6 avg.)

The tweet average for the total three-year analysis was 110.2 tweets per institutional journalist and 237.8 per blogger. A chi-square formula was run to test for statistical significance. The frequency difference between the two types of journalists was statistically significant ($\chi^2 = 27.30$; $df = 1$; $p < .05$). Hypothesis 1 was supported.

Hypothesis 2 stated that bloggers from non-institutional backgrounds will tweet about significantly different themes than institutional journalists. Table 4.4 reports content category, or theme, frequencies across the fifteen different coding categories by journalists and bloggers.

Table 4.4

Frequencies of Themes by Source

<i>Theme</i>	<i>Journalists</i>	<i>Bloggers</i>	<i>Total</i>	<i>Chi-Square</i>
Race opinion	140	216	356	$\chi^2 = 10.35$; $df = 1$; $p < .05$
Driver opinion	92	160	252	$\chi^2 = 8.56$; $df = 1$; $p < .05$

Driver information	203	86	289	$\chi^2 = 4.16; df = 1; p < .05$
In person race	31	6	37	
Race information	436	202	638	$\chi^2 = 4.95; df = 1; p < .05$
Opinion & Info.	178	64	242	$\chi^2 = 5.13; df = 1; p < .05$
Content Link	116	18	134	$\chi^2 = 7.68; df = 1; p < .05$
Second Screen	54	82	136	$\chi^2 = 6.29; df = 1; p < .05$
Other Journalists	79	78	157	
Retweet	145	134	279	
Career	28	17	45	
Tweet to fan	216	262	478	$\chi^2 = 8.71; df = 1; p < .05$
Other	6	26	32	$\chi^2 = 6.09; df = 1; p < .05$
Source Use/Quotes	460	72	532	$\chi^2 = 15.25; df = 1; p < .05$
Promotion	21	4	25	
Totals	2,205	1,427	3,632	

A Spearman rho correlation coefficient was computed to assess the relationship between tweet category and bloggers or institutional journalists. The Spearman rho correlation indicated a statistically significant correlation between category and journalist type $r_s = .6322; df = 14; p < .05$. Thus, differences in tweet category were likely to occur depending on whether the tweeter was a blogger or an institutional journalist.

The chi-squares indicated that bloggers were more likely to tweet opinions; specifically, the results show that both driver and race opinion tweets were significantly higher for bloggers than institutional journalists. Race opinion tweets included any personal analysis of the race

action, such as a typical race opinion tweet from blogger Queers for Gears: “Well that was fun. See y’all in four hours.” Queers for Gears was noting the excitement, or lackthereof, in a rain delay during the 2014 Daytona 500. A typical driver opinion blogger opinion tweet was, “What a disaster for Kahne and Busch,” by blogger Shaun Burke of onpitroad.com. His context concerned an accident wherein both Kahne and Busch were not guilty for the damage to their cars. Bloggers were also more likely to acknowledge the second screen, i.e. specific comments related to the live television production of the Daytona 500. One example of discussing the second screen is from Shaun Burke, who noted, “Thank goodness FOX moved the leader box,” denoting the placement of the scrolling tally of leaders on the television screen.

Bloggers were also more likely to tweet to fans and comment about non-race related items that were categorized as “other” in the content coding. The “other” category used for content not related to any other category on the coding list was rarely used; there were 32 “other” tweets for the three-year study, representing 1% of tweets. Of the 32 tweets, 26 were from bloggers, and many related to other aspects of the blogger’s persona. Queers for Gears, for example, used his Twitter account to discuss his platform as a gay activist in a humorous way, such as his tweet, “If gays are allowed to marry, next thing you know, some ex-farmhand will want to marry his Clydesdale. #SlipperySlope.” Regarding fan tweets, bloggers conversed with fans, such as blogger Steve Waid, who said during the rained out 2012 Daytona 500 to fan @bama4me sitting inside, “@bama4me That’s the way to watch this one!”

Institutional journalists were significantly more likely to tweet information, such as race information and driver information. A typical race information tweet often included a posting of leaders or the status of a caution, such as a 2013 Daytona 500 tweet from the Associated Press’ Jenna Fryer: “Crash. Montoya in it, Stewart, Keselowski.” Driver information usually included

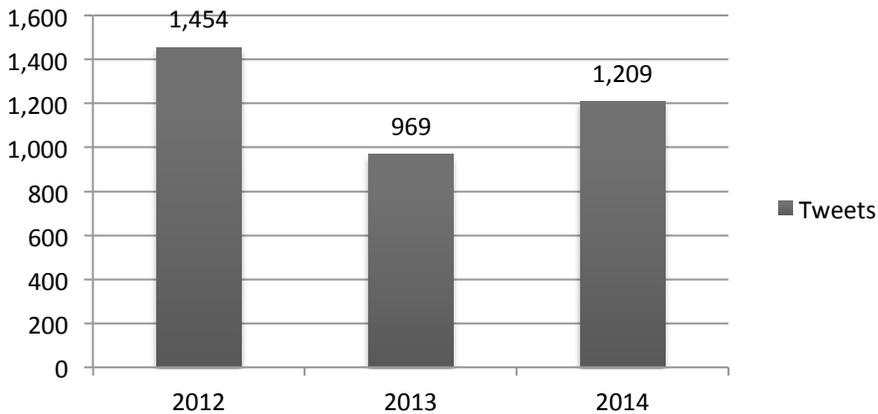
second-hand information about the driver as spoken to his crew or spotter, such as a tweet from MRN.com's Dustin Long during the 2014 Daytona 500: "#NASCAR – Kyle Busch penalized for removing equipment from pit box... pass through penalty. #AskMRN #MRNRadio." Content links were also statistically more likely to come from institutional journalists, wherein links to other Web sites or photos were included in a tweet. *USA Today*'s Nate Ryan tweeted a link during the 2013 Daytona 500 that read, "Here's how national #nascar media predicted the 2013 Daytona 500 winner and Sprint Cup champion #nascar <http://twitpic.com/c6jy7h>."

Institutional journalists were also significantly more likely to tweet more combined information and opinion tweets, wherein analysis is included alongside race information. A typical tweet from ESPN.com's David Newton during the 2014 Daytona 500 demonstrates his personal take on the current track situation while also explaining it: "They are taking three-wide six rows deep after the front two spots. Hold your breath. #Daytona500." Finally, the source use and quotes category was strongly significantly higher for institutional journalists than bloggers. Institutional journalists often included quotes from drivers as they spoke to other media about their accidents or with their spotters. One typical comment during the 2012 Daytona 500 was from Bob Pockrass of *Sporting News*: "Dale Jr.: 'The middle and the top is not ok to race on.' #nascar." The second hypothesis was thus supported because 10 of the 15 content categories showed statistically significant differences.

The third hypothesis asserted that a majority of journalists would tweet more frequently with each passing year. Table 4.1 and Table 4.2 demonstrate the frequencies of traditional journalists and bloggers year by year. Hypothesis 3 was tested by analyzing frequencies of each journalist year by year to see if increases were noted year by year. Table 4.5 shows the data variances by year.

Table 4.5

Institutional Journalist and Blogger Tweet Frequencies by Year



The data amounts varied wildly in 2013, as the chi-square tests indicated. Between 2012 and 2013, tweet frequencies changed by a statistically significant amount, with ($\chi^2 = 68.98$; $df = 1$; $p < .05$), as there were significantly more tweets in 2012. Between 2013 and 2014 the chi-square indicated a statistically significant tweet frequency, with ($\chi^2 = 157.84$; $df = 1$; $p < .05$) However, the statistically significant findings in the frequency of tweets year by year do not demonstrate an increase year by year, as 2013 tweets were less than 2012 and 2014. When comparing the total tweet count over all three years, there are increases noted with only five journalists, all of whom are institutional journalists working in television broadcast booths. The five journalists demonstrating an increase in tweet frequency represent 19% of the research group. The third hypothesis was thus not supported as the majority, or 51%, of all journalists, did not increase their tweet frequencies. However, broadcast journalists, specifically only those broadcasters giving live race commentary from a broadcast booth, demonstrated support for

Hypothesis 3 as four of the twenty institutional journalists did tweet more frequently; however this did not represent all, or even most, journalists.

The first research question was divided into four subcategories. RQ_{1a} asked whether institutional print and online journalists tweeted more frequently with each passing year. Table 4.6 shows the institutional print and online journalist tweeting frequencies per year, along with organizational affiliation.

Table 4.6

Institutional Print and Online Journalist Tweeting Frequencies

<i>Journalist</i>	<i>Organization</i>	<i>2012 tweets</i>	<i>2013 tweets</i>	<i>2014 tweets</i>	<i>Total</i>
Jenna Fryer	Associated Press	<i>134</i>	76	98	308
Jeff Gluck	<i>USA Today</i>	<i>172</i>	41	139	352
Dustin Long	MRN.com	94	84	<i>263</i>	441
David Newton	ESPN.com	<i>60</i>	31	47	138
Bob Pockrass	<i>Sporting News</i>	<i>77</i>	49	<i>151</i>	277
Pete Pistone	MRN.com	<i>35</i>	0	29	64
Nate Ryan	<i>USA Today</i>	<i>72</i>	50	83	205
Marty Smith	ESPN.com	<i>65</i>	49	62	176
Total		709	380	872	1,961

Note: The highest frequency year for each journalist is noted in italics.

An analysis of the frequencies of each print and online journalists showed that among the three years of analysis, there were moderate increases or decreases between 2012 and 2014, with

a notable lull for all of the journalists in 2013. Chi-squares were tabulated to see if the tweet increases and decreases were statistically significant. A chi-square test for 2012 to 2013 indicated statistical significance, with ($\chi^2 = 11.579$; $df = 1$; $p < .05$), demonstrating a decrease in frequency. For year 2013 to 2014, another chi-square was run to see if the observed increases were statistically significant. The chi-square indicated statistical significance, with ($\chi^2 = 153.516$; $df = 1$; $p < .05$), demonstrating an increase in frequency. A chi-square was then run to analyze tweets between 2012 and 2014. The chi-square indicated statistical significance, with ($\chi^2 = 10.05$; $df = 1$; $p < .05$). Research question 1a showed statistical significance with each passing year. However, qualitative analysis shows that while statistically significant, there was not an increase each year.

Research Question 1b asked whether television/radio broadcast journalists tweeted more frequently with each passing year. There were twelve television and radio broadcasters in the research sample. Table 4.7 shows the tweet frequencies of the broadcasters overall.

Table 4.7

Radio/Television Broadcast Role and Tweeting Frequencies

<i>Broadcaster</i>	<i>Organization & Role</i>	<i>2012 tweets</i>	<i>2013 tweets</i>	<i>2014 tweets</i>	<i>Total</i>
Mike Bagley	MRN announcer	1	3	7	11
Steve Byrnes	FOX pit reporter	10	1	0	11
Jeff Hammond	FOX commentator	10	3	13	26
Mike Joy	FOX play by play	0	0	23	23
Claire Lang	Sirius/XM reporter	23	8	3	34

Larry McReynolds	FOX play by play	0	0	4	4
Dave Moody	MRN announcer	23	2	10	35
Chris Myers	FOX commentator	0	0	5	5
Wendy Venturini	FOX pit reporter	39	0	2	41
Krista Voda	FOX pit reporter	13	2	1	16
Darrell Waltrip	FOX play by play	8	0	12	20
Matt Yocum	FOX pit reporter	13	0	5	18
Total		140	19	85	244

Note: Those frequencies in italics represent the highest tweet frequencies for each broadcaster.

Relatively small cell sizes precluded the use of chi-square analyses to determine difference, yet aggregate frequencies showed that four of the twelve television and radio broadcasters tweeted more frequently with each passing year. Six of the radio and television journalists did not tweet more frequently with each passing year as evidenced by their decreased tweets from 2012 to 2014, while two television broadcast journalists tweeted in 2012, tweeted less in 2013, and then tweeted more in 2014 than 2012. Combined totals show that television and radio broadcasters are not tweeting more with each passing year.

The third aspect of the first research question, Research Question 1c, asked whether print and online institutional journalists and bloggers were more homogenous in their tweet types with each passing year. Table 4.8 and Table 4.9 display tweet frequencies per year comparing journalists and bloggers in the research sample.

Table 4.8

Institutional Print and Online Journalist Category Frequencies by Year

<i>Category</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>Total</i>
Race Opinion	60	13	36	109
Driver Opinion	42	20	28	90
Driver Information	63	56	77	196
In person race	11	5	8	24
Race Information	174	100	147	421
Opinion & Info.	70	28	66	164
Content Link	33	17	67	100
Second Screen	23	8	13	44
Other Journalists	25	6	34	65
Retweet	23	25	65	113
Career	8	0	13	21
Tweet to Fan	23	21	113	157
Other	1	0	2	3
Source Use/Quotes	154	82	201	437
Promotion	16	2	0	18
Total	709	380	872	1,961

Table 4.9

Blogger Category Frequencies by Year

<i>Category</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>Total</i>
-----------------	-------------	-------------	-------------	--------------

Race Opinion	157	27	32	216
Driver Opinion	57	59	44	160
Driver Information	43	32	11	86
In person race	2	3	1	6
Race Information	45	126	31	202
Opinion & Info.	21	18	23	64
Content Link	5	8	5	18
Second Screen	32	18	32	82
Other Journalists	56	14	8	78
Retweet	33	68	33	134
Career	12	4	1	17
Tweet to fan	106	137	19	262
Other	18	3	5	26
Source Use/Quotes	2	45	25	72
Promotion	2	2	0	4
Total	605	570	252	1,427

Category homogeneity was tested via Spearman rho calculations compared per year between institutional print and online journalists and bloggers. A Spearman rho correlation coefficient was calculated for the content categories comparing journalist and blogger category use between 2012 to 2013. The Spearman rho demonstrated a significant correlation, with ($r_s = .586$; $df = 14$; $p < .05$). A second Spearman correlation coefficient was calculated comparing the tweets between print and online journalists and bloggers for 2013 with 2014. The Spearman rho demonstrated a significant correlation, with ($r_s = .544$; $df = 14$; $p < .05$), but the r value was

lower than in 2012, suggesting a less significant finding when considering homogeneity, as the r value was not higher. A third Spearman rho correlation coefficient was run to affirm any changes between 2012 and 2014 between category use of institutional print and online journalists with bloggers. The third Spearman rho correlation coefficient demonstrated a significant correlation, with ($r_s = .612$; $df = 14$; $p < .05$) When comparing institutional print journalists with bloggers, the Spearman rho correlation coefficients indicates that journalists are becoming more homogenous with their tweeting behavior, as the r value comparing 2014 with 2012 shows a higher r value of .612 in 2014 versus .586 in 2012.

In order to test homogeneity together, to see if bloggers and institutional journalists when combined moved toward more homogenous tweeting behaviors, Spearman rhos were run between 2012 and 2013, again between 2013 and 2014, and finally between 2012 and 2014 to see if there was increased homogeneity including the bloggers. The 2012 Spearman rho correlation coefficient indicated ($r_s = .312$; $df = 14$; $p > .05$). The 2013 Spearman rho correlation coefficient indicated ($r_s = .221$; $df = 14$; $p < .05$). The Spearman rho correlation coefficient for 2014 indicated ($r_s = .410$; $df = 14$; $p > .05$). An important note is that the 2014 r value is higher than the 2012 r value, which indicates, that in the aggregate, there is movement toward homogeneity.

Finally, Spearman rhos were run to test journalists among themselves and bloggers among themselves to note any movement toward homogeneity. When comparing 2012 with 2013, a Spearman rho for institutional journalists was run with a correlation coefficient indicating ($r_s = .869$; $df = 14$; $p > .05$). When comparing 2013 with 2014, the institutional journalist Spearman rho correlation coefficient indicated ($r_s = .893$; $df = 14$; $p > .05$). When comparing institutional journalists between 2012 and 2014, the Spearman rho correlation

coefficient indicated ($r_s = .789$; $df = 14$; $p > .05$). When considered in the aggregate, the highest correlation coefficient when comparing institutional journalists was from 2013 to 2014, which suggests movement toward homogeneity. The lowest Spearman rho correlation coefficient was noted when comparing 2012 with 2014, which indicates that there was more difference as time went on with institutional journalist tweets, but more toward a homogeneous type of tweeting overall.

Bloggers were also compared using Spearman rho correlation coefficients. The 2012 blogger frequency rankings were compared with the 2013 frequency rankings, and the Spearman rho correlation coefficient indicated ($r_s = .648$; $df = 14$; $p > .05$). Blogger frequencies were compared from 2013 to 2014, and the Spearman rho correlation coefficient indicated ($r_s = .777$; $df = 14$; $p > .05$). Finally, the frequencies for categories were compared between 2012 and 2014, and the Spearman rho correlation coefficient indicated ($r_s = .614$; $df = 14$; $p > .05$). The blogger Spearman rho correlation coefficients likewise indicated a movement toward homogeneity when the 2013 and 2014 data were compared with the lowest homogeneity of 2012 to 2014 and the next lowest homogeneity of 2012 to 2013. Thus, the Spearman rho results suggest that bloggers were tweeting more similar categories as time went on, just as the institutional journalists did.

Research Question 1d asked whether television and radio broadcast journalists were more homogenous in their tweet types with each passing year. Table 4.10 shows tweet frequencies for television and radio broadcasters over the three years of study. Table 4.10 was used with the blogger data from Table 4.9 to determine homogeneity patterns via Spearman rho analyses.

Table 4.10

Television/Radio Broadcaster Category Frequencies Per Year

<i>Category</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>Total</i>
Race Opinion	20	0	11	31
Driver Opinion	7	0	0	7
Driver Information	7	0	0	7
In person race	2	1	4	7
Race Information	6	2	7	15
Opinion & Info.	7	2	5	14
Content Link	11	0	5	16
Second Screen	10	0	0	10
Other Journalists	11	0	3	14
Retweet	8	9	15	32
Career	2	0	5	7
Tweet to fan	38	3	18	59
Other	1	1	1	3
Source Use/Quotes	11	1	11	23
Promotion	1	0	2	3
Total	140	19	85	244

Homogeneity was tested via Spearman rho calculations of each category for each radio and television broadcaster and compared per year with the same blogger group from Research Question 3. A Spearman rho correlation coefficient was calculated for 2012 to 2013 for

broadcast journalists. The Spearman rho indicated that there was not a significant correlation, with ($r_s = .478$; $df = 14$; $p < .05$). A second Spearman rho was calculated to determine whether there was a correlation between 2013 and 2014 tweet themes. The Spearman rho indicated that there was not a significant correlation, with ($r_s = .464$; $df = 14$; $p > .05$). A third Spearman rho was run to compare 2012 blogger and television/radio broadcaster tweets with 2014 blogger and television/radio broadcaster tweets. The third Spearman rho indicated that there was no significant correlation, with ($r_s = .172$; $df = 14$; $p > .05$). Thus, there was evidence that there was no movement toward homogeneity between television/radio broadcasters and bloggers.

Hypothesis 4 asserted that journalists with less experience in institutional journalism environments would be more likely to tweet more frequently; thus, the longer a journalist has been in the profession, the less likely she or he would tweet. Table 4.11 shows the veteran journalists in the study, including the year each journalist’s career began, along with their tweet totals. Table 4.11 shows the younger journalists in the study, including the year each journalist’s career began, along with their tweet totals.

Table 4.11

Journalist Experience by Year – Veteran Journalists

<i>Journalist</i>	<i>Year Entered Profession</i>	<i>Years Experience</i>	<i>Total Tweets</i>
Claire Lang	1977	37	34
Mike Joy	1978	36	23
Chris Myers	1981	33	5
David Newton	1981	33	138

Steve Byrnes	1987	27	11
Bob Pockrass	1991	23	277
Mike Bagley	1992	22	11
Dustin Long	1992	22	441
Dave Moody	1993	21	35
Krista Voda	1996	18	16
Total			991

Table 4.12

Journalist Experience by Year – Younger Journalists

<i>Journalist</i>	<i>Year Entered Profession</i>	<i>Years Experience</i>	<i>Total Tweets</i>
Jenna Fryer	1997	17	308
Marty Smith	1999	15	176
Wendy Venturini	2000	14	41
Jeff Hammond	2001	13	26
Larry McReynolds	2001	13	4
Pete Pistone	2001	13	64
Darrell Waltrip	2001	13	20
Matt Yocum	2001	13	18
Jeff Gluck	2005	9	352
Nate Ryan	2006	8	205
Total			1,214

As Table 4.11 shows, veteran journalists were responsible for 991 tweets, while Table 4.10 demonstrates that younger journalists were responsible for 1,214 tweets. The hypothesis was tested via chi-square comparing veteran journalists with younger journalists. The chi-square demonstrated statistical significance, with ($\chi^2 = 22.55$; $df = 1$; $p < .05$). Younger journalists were indeed shown to tweet more frequently. Hypothesis 4 is supported.

The fifth hypothesis asserted that the themes of tweets would be significantly different for veteran institutional journalists than younger institutional journalists. Table 4.13 shows the category frequencies of veteran journalists with younger journalists for each year.

Table 4.13

Category Frequencies for Veteran Journalists and Younger Journalists

<i>Theme</i>	<i>Veterans</i>	<i>Younger</i>	<i>Total</i>	<i>Chi-Square</i>
Race opinion	49	91	140	$\chi^2 = 5.65$; $df = 14$; $p < .05$
Driver opinion	33	59	92	
Driver information	101	102	203	
In person race	15	16	31	
Race information	226	210	436	$\chi^2 = 8.34$; $df = 14$; $p < .05$
Opinion & Info.	52	126	178	$\chi^2 = 17.8$; $df = 14$; $p < .05$
Content Link	59	57	116	
Second Screen	16	38	54	$\chi^2 = 4.8$; $df = 14$; $p < .05$
Other Journalists	36	43	79	
Retweet	56	90	145	

Career	12	16	28	
Tweet to fan	87	129	216	
Other	4	2	6	
Source Use/Quotes	219	241	460	
Promotion	14	7	21	$\chi^2=4.861; df=14; p < .05$
Totals	991	1,214	2,205	

Comparing the categories of the veteran journalists to the younger journalists, a Spearman rho correlation coefficient was used to determine if there was a correlation between amount of time in the profession and tweet theme. The Spearman rho demonstrated a significant correlation, with ($r_s = .6186; df = 14; p < .05$). Thus, veteran journalists and younger journalists were significantly likely to tweet about different themes.

Five of the fifteen chi-square analyses comparing veteran institutional journalists with younger institutional journalists demonstrated statistical significance, as noted in Table 4.13. Veteran journalists were significantly more likely to tweet (a) race information and (b) to promote other aspects of their employer. Younger journalists were significantly more likely to (a) tweet about race opinion, (b) to offer both opinion and information within one tweet, and (c) to acknowledge the second screen. Hypothesis 5 is supported.

The sixth hypothesis was subdivided into two parts. Hypothesis 6_a noted that to demonstrate credibility, institutional journalists would be as likely as the general population to use Twitter's photo-sharing option in order to visually affirm their presence during the race. Institutional journalists tweeted 89 photos from 2,205 tweets, for a total of 4% of tweets. A qualitative visual analysis of each of the 89 tweeted photos was used to determine subject and

place for each photo. Of the 89 photos, 38 photos were screen captures of weather radar near Daytona International Speedway. The remaining 51 photos were scenes during the Daytona 500. Visual analysis via knowledge of access locations at the speedway determined that 48 of the photos were taken in restricted, journalist-only areas of the speedway. As credibility is determined both by the access journalists have to primary areas of the speedway, along with information dissemination such as weather radar photos, a qualitative analysis suggests that the sixth hypothesis is supported based on 86 of the 89 photos in use for information sharing and restricted access purposes.

In order to test Hypothesis 6_a empirically, a quantitative component was included per Lee's (2014) data that 38% of tweets have photos among the general population. Institutional journalists had 89 photos from $n = 2,205$ tweets, for 4% of total tweets, with ($\chi^2 = 1,077.45$; $df = 1$; $p < .05$). Thus, institutional journalists were significantly less likely to tweet photos than the general population. Hypothesis 6_a was not supported empirically.

Hypothesis 6_b noted that institutional journalists would be significantly more likely to tweet photos than bloggers. Bloggers sent 14 photos, constituting 1% of tweets while, as mentioned above, institutional journalists sent 89, comprising 4% of tweets. A chi-square test was run to determine statistical significance between bloggers and institutional journalists. The chi-square demonstrated statistical significance, with ($\chi^2 = 27.63$; $df = 1$; $p < .05$). Hypothesis 6_b was supported.

Hypothesis 7 stated that there would be significantly more tweets during caution periods of the race than green flag periods of the race. Table 4.14 shows the tweet frequencies for the green flag and caution portions of the race.

Table 4.14

Tweet Frequencies During Caution and Green Flag Portions of Race

<i>Time of race</i>	<i>Tweets</i>	<i>Percent</i>
Green Flag	1,669	46%
Caution	1,963	54%
Total	3,632	100%

A chi-square analysis was run to determine if there was statistical significance of tweet frequency with green flag or caution flag portions of the race. The chi-square indicated statistical significance, with ($\chi^2 = 23.79$; $df = 1$; $p < .05$). Therefore, there was a statistical significance between tweet frequency and green flag or caution portions of the NASCAR race. The contextual insight into the finding of the chi-square is particularly significant given that caution periods of the race are not when the majority of race action, and usually race time, occur. Caution periods are usually, though not always, brief periods between action-filled portions of the live event. Hypothesis 7 is supported.

Research Question 3 asked what popular blogger themes would emerge during the race. Table 4.15 shows the most popular tweet themes for bloggers and institutional journalists.

Table 4.15

Most Popular Tweet Themes by Bloggers and Institutional Journalists

<i>Bloggers Top Five Themes</i>	<i>Frequency</i>	<i>Journalist Top Five Themes</i>	<i>Frequency</i>
1. Tweet to fan	262	1. Source use/Quotes	460
2. Race opinion	216	2. Race information	436
3. Race information	202	3. Tweet to fan	216
4. Driver opinion	160	4. Driver information	203
5. Retweets	134	5. Opinion & information	178

The content category frequency list showed that the five most popular themes among bloggers were (1) tweeting to fans, (2) race opinion, (3) race information, (4) driver opinion, and (5) retweets, answering Research Question 3.

Research Question 4, which asked what popular tweet themes would emerge among institutional journalists during the race. Table 4.15 shows the most popular tweet themes for bloggers and institutional journalists. The content category frequency list showed that the five most popular themes among institutional journalists were (1) source use/quotes, (2) race information, (3) tweeting to fans, (4) driver information, and (5) opinion and information. Table 4.8-10, as mentioned above, shows the most popular tweet themes, answering Research Question 4.

Hypothesis 8 stated that institutional journalists would be more likely to have a neutral valence in their tweets than bloggers. Valence was coded with one of three options: positive, neutral, or negative. The valence was coded as follows: a “1” value meant that the tweet was

positive valence, a “2” value meant that the tweet was neutral valence, and a “3” value meant that the tweet was negative valence. A t-test was conducted comparing the dependent variable of tweet valence with the independent variable of journalist type (institutional journalists with bloggers). A t-test was deemed the best test to run given the nominal data and three variable sample, in comparing means between two categories, in this case institutional journalists with bloggers. The t-test indicated statistical significance between the groups, with institutional journalists representing ($M = 1.39$; $SD = .488$) and bloggers representing ($M = 1.87$; $SD = .546$) with $t(3632) df = 171.85$; $p < .05$. The results suggest that tweet valence is dependent upon whether the tweeter is an institutional journalist or a blogger, and that institutional journalists offer more positive content overall than bloggers. As valence was categorized as (1) positive, (2) neutral, and (3) negative, it is important to note, however, that hypothesis 8 was not supported based on the neutral value of “2,” which indicates that institutional journalists are more likely to be positive than neutral and bloggers, therefore, are more neutral, as the M value was closer to 2 for bloggers than institutional journalists.

Hypothesis 9 noted that there would be an increase in hashtag use year by year, as all journalists become more familiar with the search and aggregation features of Twitter. Table 4.16 shows the number of hashtags used year by year.

Table 4.16

Hashtag Use by Year During Daytona 500

<i>Tweets</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>Total</i>
Include Hashtag	850 (58%)	469 (48%)	603 (50%)	1,922
No Hashtag	604 (42%)	500 (52%)	606 (50%)	1,710

Total	1,454	969	1,209	3,632
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A chi-square was run comparing hashtag use with tweet year. For content analysis consistency, any hashtag for any word or phrase counted as a “yes” for hashtag use. The chi-square indicated statistical significance of hashtag use by year, with ($\chi^2 = 24.12$; $df = 1$; $p < .05$). However, a visual analysis of hashtag use by year demonstrates that there was not an increase in hashtag use year after year, and thus Hypothesis 9 is not supported.

Chapter Five – Discussion

The profession of journalism has been forced to confront the problematic movement of revenue and news content to the online, interactive, 24-hour news cycle that is social media, and specifically Twitter and Facebook. Modern journalism is no longer the time-delayed, deadline driven institution that it once was. While live televised events, particularly sporting events, have always had an audience of fans and fellow journalists instantly processing and sharing what they are viewing, the advent and proliferation of social media have permanently and irrevocably altered how sports journalists report live events (Roberts & Emmons, 2013). As longitudinal data is lacking regarding this institutional shift, this study addressed a gap in research demonstrating how these shifts occur.

The four completed objectives of this study were aimed at learning how journalists are using Twitter as their familiarity with the medium increases, along with a possible established routine, or way to “do” Twitter emerges, per institutional theory premises. The first objective was to discern longitudinal patterns that have emerged over three years of journalist Twitter use to see any movement toward accepted content sharing practices on the medium. The second objective was to discover what exactly the patterns were in regards to journalist content sharing. The third objective was to see how the maturation of second screen has perhaps contributed to Twitter content evolution with the frequency and journalist content choices during specific televised portions of a sporting event. Finally, this study has contributed to theory development by extending Lowrey’s (2011) news ecology model, which predicts pattern formation of new instruments in institutional settings that become an established way to write and share content. This discussion chapter expounds upon the findings of the study. The first section of this chapter

summarizes the results. The second section addresses the theory development, including extending the news ecology model of institutional theory. The third section offers practical applications in considering televised live event viewing and reporting, specifically the journalist and blogger roles therein. Finally, the fourth section notes limitations in this current study as well as future research considerations as Twitter, televised live event online interaction, and the institution of journalism continue to evolve.

Summary of Results

This dissertation added a needed longitudinal focus to the emerging institutional patterns of Twitter use by professional journalists and bloggers. Variances in tweeting behavior suggest that on-air broadcasters, specifically play-by-play announcers, have seen a notable shift in Twitter use, while online and print journalists have kept a somewhat stable presence over three years on the medium. Bloggers have varied wildly in their Twitter use based on this study's results, but have used the medium with more relative frequency during the live event, when they are using it. Blogger use can be tied to their interest in the activity during any given event, as Lotan, et. al. argue (2011). Race action peaked during cautions and race stoppage, while long green flag runs showed slower Twitter content sharing. Not among the hypotheses but noted during qualitative review, content sharing slows by all journalists as the race concludes, with final laps seeing limited tweeting, similar to findings by Roberts and Emmons (2013). Institutional journalists had more positive valence in their tweets, while bloggers had a less positive valence.

Comparing frequencies between bloggers and institutional journalists demonstrated that ten of the fifteen content categories demonstrated statistical significance: race opinion, driver opinion, driver information, race information, opinion & information, content link sharing,

second screen, tweeting to fans, other, and source use/quotes. The categories of race opinion, driver opinion, opinion & information, second screen, tweeting to fans, and other were shown as significantly higher for bloggers, while the categories of driver information, race information, content link sharing, and source use/quotes were higher for institutional journalists.

When comparing tweet frequency categories among institutional journalists and bloggers themselves, higher correlation coefficients when comparing the subsequent years suggested a movement toward homogeneity with type of tweet sent. Both bloggers and institutional journalists were more likely to tweet like other institutional journalists and bloggers as time went by, indicative of not only homogeneity but possibly mimicry as well.

Veteran journalists and younger journalists were shown to vary in their content sharing, with younger journalists more likely to share opinions and veteran journalists more likely to share information. Veteran journalists also tweeted less frequently than younger journalists.

Key Research Findings from Hypotheses and Research Questions

The main goal of this study was testing insights into long-term Twitter use via the longitudinal nature of the research, which directly addresses the instrumental use to institutional routine premise of institutional theory. Over the course of the three years of data, one overt theme was the adoption practices by bloggers and print journalists. Bloggers were much more likely to tweet frequently during the race. This finding is in line with prior research that demonstrates that bloggers use Twitter as a platform to find audiences (Yoo, Choi, Choi & Rho, 2014) and that social media, particularly interest-based platforms such as Twitter, help build “social capital,” wherein posters gain followings based on their specializations, such as news or opinion, in an open environment, wherein blogger insights can have as much value as journalists within institutional settings (see Shirky, 2009; Lowrey & Mackay, 2008; Lowrey & Erzikova,

2014). An important consideration with live event tweeting to contextualize these findings, however, is the obvious secondary duties of institutional journalists that bloggers do not have. Bloggers can tweet as often as they wish without worrying about deadlines. The heavy institutional print and online tweet frequencies, then, are more telling. Interviews with college football reporters conducted by Roberts and Emmons (2013) suggests that many institutional print and online journalists use Twitter as their notes. Interviews were not conducted for this dissertation to ascertain whether the journalists were using Twitter for notes, but anecdotal evidence suggests that this is a possibility. This explanation also offers insights into why television/radio broadcasters do not tweet as often, since their professional duties do not often include a lot of notes.

This research also showed that tweet content was shown to be significantly different for bloggers and institutional journalists in several categories. These findings are similar to other emerging studies demonstrating that Twitter users seek insights into live events for debating the action on the screen and that sharing analysis leads to more interaction and more visibility (Buschow, Schneider & Ueberheide, 2014; Crupi, 2013). Bloggers were more likely to share opinions, either race opinions or driver opinions. Examples include tweets from Queers for Gears, who added humorous tweets during the 2012 Daytona 500 jet dryer caution when he stated, “I’ve seen it all is the new drinking game phrase. #drink” and “Drivers are out of their cars, just chillin’, you know, in the middle of the Daytona 500 after a jet dryer exploded. Same ol’ same ol’.” Bloggers offered opinions about the weather, also, such as Shaun Burke, who commented in 2014, “If this rain starts drifting south, see ya tomorrow.” All of the institutional journalists shared opinions as well, however, with a greater percentage coming from television/radio broadcasters than print and online institutional journalists based on type of tweet.

Darrell Waltrip shared a typical broadcaster tweet in 2014, when he tweeted, “This is such a great event, so much excitement and anticipation, now it’s raining and we’re on hold. Come on man!”

Institutional journalists were far more likely to share race information and driver information, and by the widest margin, they were more likely to quote sources. A familiar tweet stream came from print and online institutional journalists including Dustin Long, Jenna Fryer, and Bob Pockrass when quoting interviewees. They would send a series of tweets quickly in the newsfeed, and surround the tweet with quotes to denote that it was pulled from an interview. One example is from Dustin Long, who wrote “#NASCAR Brian Vickers tells @MRNRadio: ‘We’ve been able to make up a lot of ground. Now we’ve got to maintain it. #MRN.’” He then follows with another tweet that reads, “#NASCAR Vickers ‘car is a little snug. We’re just plugging away. #MRN’.” One note to consider is that there was little retweeting of other journalist interview tweets. If an institutional journalist was interested in quoting a driver, she or he would do it without a retweet of another journalist. Considering that quotes are information available to all, the easy thing for a journalist to do would be to retweet an interview, yet the tweeters put the quotes directly into their own Twitter feed.

Tweeting to fans was a statistically significant finding for bloggers, who tweeted more frequently to fans than institutional journalists. Shaun Burke had several conversations with fans throughout the three years of data analysis, mostly banter about the race, such as, “@rmast22 200 grand and a wreck. It never ends at #daytona,” and “@CrossmanMatt If that mess happened 10 feet farther down the track, Jimmy Hoffa would be trending.” Steve Waid blogged with fans in 2012, when they asked him if he’d seen similar accidents such as the jet dryer explosion, to

which he replied, “Yeah, and there was at least one other, but no jet fuel!” and “Trust me. Strangest. Daytona. Ever. And I’m going to pass out.”

Institutional journalists often shared race information, which was often shared in short bursts of abbreviated information. For example, Jenna Fryer sent in quick subsequent bursts during the 2012 Daytona 500: “Newman. Caution.” “22 being pushed backward down pit road.” “Guess 22 hit the 39 on pit road.” “Now Dinger being pushed to garage.” Fryer’s narrative is choppy but quick, suggesting that she is tweeting quickly while processing the caution and wanting to report immediately on what she is seeing. Bob Pockrass replied to a pit road penalty during the 2014 Daytona 500 that Matt Kenseth had properly gotten to his pit stall, as Pockrass tweeted a photo of the NASCAR penalty card to accompany the tweet. Such insights suggest a credible voice and an alternative to the broadcasters on television, which assists institutional print and online journalists in remaining relevant in an era of live sporting event instantaneous sharing.

Suggested movement toward homogeneity when new technology shifts from instrumental use toward comfort of use and routinization of the practice is noted in some of the results, including in institutional print and online journalists and bloggers. Boczkowski (2010) reported similar findings in a related online journalism study. Additionally, hashtags were not shown to be used more frequently with each passing year, with highest use as percentage of tweets in the first year of analysis, 2012. Green flag periods, though the lengthiest periods of race action, were shown to have less tweeting than caution flag times, with 54% of all tweets but less than 40% of total race time. Although formal statistics are kept by NASCAR for each race, noting caution laps and green laps, there is not a known aggregation of the percentage of caution laps or green flag laps completed for races historically. *USA Today* printed a tally of caution percentages in

races over a two-year period from 2001-2002 and noted that caution laps averaged 15% of each race, with a high of 26% at Kansas Speedway that year and a low of 0% at the October race at Talladega Superspeedway (“NASCAR wrecks,” 2002). Thus, based on this data, the caution lap tweeting demonstrates possibly high levels of ebb and flow, especially when less than one quarter of race laps occur under caution.

Journalist photo use suggests visual representation at key physical locations of the race and also offered weather visuals, which offer credibility and authority. Photo use suggests credibility and journalists seemed to use photo sharing to demonstrate credibility (Lee, 2014). This study offers support for photo sharing as a way that institutional journalists show that they have the access to restricted portions of the track, which is one way to build a follower base, according to preliminary research by Lee (2014).

Veteran journalists and younger journalists were shown in this study to have different Twitter use patterns, with veteran journalists tweeting more information and less often and younger journalists tweeting more opinions and more often, matching prior research by Roberts and Emmons (2013). Also, younger journalists are more likely to acknowledge the second screen, while veteran journalists are more likely to promote their employer. On-air television personalities specifically broadcasting from booths during the Daytona 500 were shown to have increased Twitter use, comprising the only group who tweeted more in 2014 than the other groups. This finding has not been tested before in known prior research.

The valence of tweets was statistically significant between bloggers and institutional journalists. Institutional journalists noted more positive valence overall than bloggers. Opinion sharing would naturally be more likely to include positivity or negatively, and the results thus suggest that bloggers are more likely to share negative information in their opinions than

institutional journalists. Cynicism would likely be easier for those tweeters not receiving a paycheck for presence at an event. Institutional journalists may have more context into particular reasons why things are happening on the track, and thus are more reserved in their statements and overall more positive in their comments. Also, journalists on a NASCAR beat, even if not a NASCAR fan before starting their reporting career, perhaps have come to have an overall positive attitude about the sport, or could have developed a career out of their interests.

Theoretical implications of this research's findings will be discussed in the next section, including both institutional and branding theories, followed by practical insights into the data that provide fodder for journalist Twitter use.

Theoretical Implications

This dissertation offers empirical evidence of Twitter as instrument and emerging routinized practice for professional, institutional-affiliated journalists. Content analysis of three years of data as presented in this research offers support for considerations as to how professional routines become routines, in institutionalized settings such as newsrooms (see Boczkowski, 2009; Lowrey, 2011; Scott, 2008). The select group of nationwide institution-affiliated journalists supports the premises of institutional theory, including the news ecology model and notions of mimicry and contributes to literature in these areas of media sociology scholarship. The next section addresses the theoretical contributions of this research as they apply to mimicry and journalism homogeneity, Weber's (2009) institutional theory as it pertains to variables contributing to social institutional routines, and support for Lowrey's (2011) news ecology model.

Strong social forces that Weber (2009) acknowledges self-constrain institutional participants such as institutional journalists offer a suggestion for the higher information-related

tweets and source use tweets they sent. Pre-Twitter reporting relied heavily on source gathering and information sharing, and Weberian notions would suggest that such social rules likely hold powerful sway over individual live reporting choices. Thus, with the relative freedom that bloggers enjoy, opinion-sharing and analysis would be easier for bloggers from a social order standpoint. The data from this study offer statistically significant evidence affirming such unseen constraints. The blogger tweet average of 237.8 to institutional journalist tweet average of 110.2 shows that bloggers are tweeting twice for every institutional journalist's tweet, suggesting greater freedom with their time first of all, and lack of constraint to hold to other aspects of what journalists "ought" to be doing in a more social sense. Bloggers felt freer to share their opinions based on a significant chi-square finding as well, suggesting more freedom to analyze and not merely report.

A recent article by Boczkowski and Siles (2014) argues that many new media research studies offer content analysis for understanding of use but do not consider context within the framework of the sociological underpinnings binding new media use to greater constructs. This study helps to address this gap in the literature by offering insights into how Twitter use is evolving among institutional journalists into a routine practice within live sports television programming. Specifically, the notion of a fixed date and time where viewers can gather online offers institutional journalists and bloggers a built-in audience that their tweeting can access. In more fluid live events, such as the Arab Spring revolution in Tunisia and Egypt in 2011, institutional journalists and bloggers were often the only source of information about the events (Lotan, Graeff, Anneny, Gaffney, Pearce & boyd, 2011). Institutional journalists do not consider television coverage of events such as the Arab Spring with the same variables as they would a pre-planned, though live, televised event, and thus less fluid live events such as an auto race

offer a more static observation lens through which to study the relationship between event and content. As such, the social space of a “contained” pre-planned live event wherein institutional journalists are used to creating text shifts the foci more cohesively to the content itself.

Lowrey’s (2011) news ecology model suggests that over time, a new instrumental use of a new technology in an institutional setting such as a newsroom would demonstrate a cacophony of outcomes at first, but via mimicry and demonstrated successes, the instrumental use would become adopted into the institutional routine, and eventually become a new norm, homogenizing the activity. This study offers support for the news ecology model in three main ways. First of all, every institutional journalist in the study maintained a Twitter presence of some kind during at least one of the study years, but most tellingly, especially the last year of study, 2014, as all of the institutional journalists in the research sample tweeted that year. Thus, maintaining a Twitter presence was deemed necessary during the live Daytona 500 broadcast. Although institutional pressures are an additional consideration in mimicry as seen here, at the institutional level, mimicry to new standards would thus be suggested. Secondly, the institutional print journalists moved toward homogeneity as the Spearman rho test results indicated. This suggests that journalists have somewhat merged toward a type of content they choose to share; in other words, they tweeted more alike one another in 2014 than they did in 2012. The news ecology model predicts such a movement toward similarity of use, as a “correct” way of using Twitter for the institution emerges.

Another example of mimicry include the Twitter fan chats employed by only Jeff Gluck formally in 2012, but added by Dustin Long in 2013 and 2014 and Mike Joy in 2014. Gluck noted in an interview that he started Twitter chats in 2009 to engage with fans during the race, and included formal “tweet-ups” shortly thereafter to meet fans in person. Dustin Long and

MRN Radio notably added the #AskMRN hashtag in 2013 to all tweets, encouraging fan interaction on Twitter. Mike Joy formally asked for fans to tweet him during an extended rain delay in 2014, his first formal online invitation to fans as seen in the data set.

Mimicry can also be seen in the retweet amounts. In the first two years of data analysis, there were 25 and 23 retweets respectively. That number jumped to 65 retweets in 2014. Source use as retweet seemed to be the reason, based on a qualitative review of the retweets. Weather experts, celebrities, and NASCAR officials were retweeted most often, adding credence to approved authorities as worthy of retweets. Retweets are a Twitter-specific phenomenon, and thus allowing precious newsfeed space to another authority, and aligning with that authority, could easily be approached with more temerity at first. As time goes by, and retweets are shown to demonstrate success and not repercussion, the practice would likely increase, as seen here.

Tweet frequencies remained relatively stable between 2012 (1,454) and 2014 (1,209) for institutional journalists, with a noted dip in tweets in 2013 that can be possibly attributed to the tenuous nature of the event that year, after the tragic accident during the NASCAR Nationwide race the day before, which had caused uncertainty about the next day's race after damage to the grandstands and front stretch fencing at Daytona International Speedway. Relative tweeting frequency stability suggests, unlike slowing yearly frequency, that institutional journalists are just as engaged in Twitter as they were three years ago. Though institutional theory does not proffer a timeline for instrumental use to become an institutionalized routine, three years of continued tweeting demonstrates a need to be present on Twitter during the Daytona 500 broadcast.

Boczkowski and Siles (2014) assert that there are four pillars of study within the combination of journalism and technological innovation: content production, content

consumption, production of materiality, and consumption of materiality. They note that the four pillars offer a framework that too often ignore the contextual role of technology, and thus studies such as this, which consider both theoretical underpinnings that link technology use with unseen but omnipresent institutional norms, offer needed insights into the sociological pressures that turn instrumental practices into institutional routines. As Boczkowski (2010) notes in his study of homogeneity in professional journalism in his online content analysis, “Timing and theme composition [makes sense of] a trend” (p. 174), and thus studying content within the framework of new media use shows empirical evidence of a suspected shift or institutional destabilization and subsequent re-stabilization.

Homogeneity is a pillar of Lowrey’s (2011) news ecology model as institutional journalists mimic one another after seeing perceived success with a new instrument, such as Twitter. Boczkowski (2010) offers a critical corollary to the notion of mimicry with what he termed the “scopic focus” of the Internet, because mimicry is possible immediately. Several examples of mimicry were noted in the institutional journalist feed when viewed during specific times of the race, such as wrecks. Jenna Fryer of the Associated Press would tweet, “Wreck” and simultaneously Bob Pockrass would tweet “wrecking – Stewart, Busch” while a third institutional journalist, Dustin Long, would tweet “caution – wreck.” Such simultaneous tweets were noted in each year of the study. Mimicry is difficult to ascertain for certain in studies such as this because it is impossible to know motive behind a journalist’s tweeting behavior. However, mimicry in news sharing emerged as a theme, perhaps not moment by moment but more holistically in the sense that journalists felt the need to tweet similar things at the same time.

Another phenomenon was when tweets would, at times, build on themselves, such as when Jenna Fryer tweeted, “caution: Gordon, Johnson, Newman” and David Newton followed within ten seconds with a list of further drivers in the caution: “Stewart Hamlin Logano” that suggested that Newton could see Fryer’s tweet and was building upon her list of drivers. Again, this is not certain, but following the Twitter activity suggests that there is some viewing of fellow journalist accounts.

Another study finding that furthers institutional theory, and the news ecology model specifically, is that institutional journalists were found to tweet more frequently during caution laps of the race than green laps. During green laps of the race, other priorities such as writing a story for the organization web site or collecting interview information may precede tweeting, but when a caution occurs, the focus shifts to immediate tweeting. Thus, there are appropriate deemed times for tweeting, and times when other professional duties become more important. In this sense, Twitter use can be similar to play-by-play reporting versus color commentary on broadcast events, when a pause in the action offers time to absorb more information and offer insights into what has occurred thus far.

The use of hashtags was included as a hypothesis in this dissertation because research suggested that hashtag use was one basis for building followings and demonstrating credibility within the medium of Twitter, where hashtags are commonplace. The findings of this research did not support increased hashtag use, which from an institutional theory standpoint suggests that hashtag use has not necessarily been adopted as a needed part of institutional journalist tweets. A qualitative analysis of each tweet shows that Dustin Long of MRN radio used the hashtag #AskMRN, #NASCAR and #MRN in almost all of his tweets. Perhaps his employer has told him that he needed to use the hashtags, or he noticed more engagement from others when using the

hashtag, but he was one of few examples of a consistent hashtag user. Further, while this study did not parse hashtags when coding into particular hashtags, there were several hashtags used, which demonstrated inconsistency of use by the research sample. Some institutional journalists used #NASCAR, which was an approved official hashtag by NASCAR in its partnership with Twitter. Other journalists used #Daytona500, and thus there were multiple search possibilities for those interested in following the race. There were hashtags noted for #Danica and #DaleJr as well as a humorous hashtag from Queers for Gears, #ReplaceMovieTitlewithDanica that was used during a lengthy weather delay caution in 2014. Other hashtags included #drink, which was meant to show humor about a caution lap drinking game, #Daytona, a takeoff on the race town, and #FOX. From an institutional theory perspective, there is not a social pressure to use the hashtag based on the findings, but hashtags also show personality.

The next section will discuss practical implications for journalist Twitter use based on the research findings.

Practical Implications for Journalist Twitter Use

Because this study is one of few longitudinal studies of journalist tweeting during a live sporting event, the findings here are a launching point, not a final analysis, for how institutional journalists and bloggers are navigating live tweeting and professional routines. There are several implications to consider, however, from the findings of this study. First of all, there was a noted variance each year in tweeting frequencies. Closer inspection of the data, though, shows patterns that are less accounted for by journalists, as a whole, and indicative of other circumstances. Qualitative review of the data demonstrated, along with the frequencies of the green flag versus caution flag tweets, that the 2013 Daytona 500 was a comparatively shorter race with much longer green flag portions, possibly producing less tweets. Also noteworthy about the 2013

Daytona 500 is that it was the day following a fan-frightening accident at the race, where almost 30 fans others were injured after a tire came off NASCAR driver Kyle Larson's car and careened into the grandstands, destroying a section of safety fence (Bernstein, 2013). There was speculation if the Daytona 500 race would be held, but the race proceeded as planned. The 2012 Daytona 500 included both a rain delay to Monday and an extended red flag to clean fuel off of the track after a jet dryer crash. Thus, there was both extra time for the race overall, extra "down" time due to lack of race action on the television and in person, and an unusual Monday evening race, which is different than the other two, Sunday-only races. However, the 2014 Daytona 500 had its own unusual circumstances as there was an unprecedented tornado warning and lengthy rain delay. The tornado warning caused the evacuation of the stands at the race and a four-hour gap in race action.

Unexpected circumstances directly impact television-viewing behavior, and thus are a critical consideration when giving context to the tweets for a given year. During the 2012 Daytona 500, Brad Keselowski's famous tweet from his car might have had a different engagement level were the race during the day on a Sunday rather than a Monday night when no other sporting event was occurring. Likewise, the tornado warning in 2014 gave FOX four hours of airtime to fill, and thus they showed the Daytona 500 from the year before, confusing some viewers and tweeters and causing banter on the site about whether FOX adequately warned the viewers that the television event was not live. Each race will have organic elements to consider when looking at Twitter data, and for this particular study, each race indeed had dramatic extenuating circumstances that limit the generalizability of the data but simultaneously offer fodder for considering contextual elements of each event when journalists tweet.

Of the bloggers, there was a much wider variance in tweeting behavior. Steve Levine was hired by *NASCAR Illustrated* and changed his Twitter account after the 2013 race. However, he did not tweet at all during the 2014 race either under his work account or his personal account. Levine represents what could be considered an outlier, in that his blogging, which was 55 tweets in 2012 and 89 tweets in 2013, possibly led to his job, yet he did not tweet after his subsequent hiring. One possible explanation is that he was learning the institutional norms of the job, of which Twitter has not reached fundamental status yet. Thus, live event blogging in Levine's case can be seen as using the medium to build a brand, but not maintain the brand. Blogger Queen Sarah tweeted only in 2012 and not at all in 2013 and 2014. Looking at her blog, it is clear that she abandoned it in August 2012. Her Twitter presence then, seemed to be tied to her blog, and when her blog discontinued, so did her Twitter account.

Bloggers has over double the number of average tweets, 237.8 tweet average to institutional journalists' 110.2 tweet average. The longitudinal nature of the research, however, tells an interesting follow-up story when looking at the frequency of tweets by bloggers and institutional journalists year by year. Institutional journalist tweets seemed to have stabilized, in that they averaged 49.9 tweets per journalist and 50.3 tweets per journalist in 2012 and 2014 respectively, while blogger went from 100.8 tweets per blogger in 2012 to 63.0 tweets per blogger in 2014. A dip in blogger tweets could suggest possible slowing of the site for audience engagement, but it is telling that by 2014, researching the bloggers shows that most of the blogging was done by Jayski, Queers for Gears, and Shaun Burke, all of whom have crossed into expert status in one way or another on other online media. Possibly, while bloggers were forerunners in Twitter use in some respects, and institutional journalists slower to adapt to the

medium (see Sheffer & Schultz, 2010), these bloggers were able to turn their status into credibility in institutional journalism.

Jayski's blog was signed into a partnership with ESPN in 2012, though Jayski makes clear on his site that his writing and opinions are his alone and ESPN merely helps with hosting and advertising. Queers for Gears advertises his site as "NASCAR and MotorSports – From a Queer Perspective," which seems to be an attempt to find a niche following, providing branding status (Page, 2012). It is interesting to note that in Queers for Gears' banter on Twitter, he tweets to institutional journalists, including the AP's Jenna Fryer, noting, "@Jennafryer big poobah with big following." There is a sense of companionship in NASCAR reporting with this tweet.

Blogger Shaun Burke's relationship with onpitroad.com, a collective site for online reports for several racing series, adds a layer of credibility to his blogging that blogger Queen Sarah does not have as a one-woman blogger with her own site to maintain. With fellow contributors to draw traffic to a site, an individual blogger can enjoy subsequent success on Twitter that might be more difficult for a less-established blogger. Blog viewers interested in other NASCAR series may recognize Burke's name from site visits and therefore gain traction on his Twitter account, which is much more difficult for Queen Sarah.

Some of the chi-squares demonstrated that bloggers and institutional journalists had wide variances in the types of tweets they shared. The highest chi-square value separating institutional journalists from bloggers was the source use/quote category, with a chi-square value of 15.25. Bloggers were therefore significantly less likely to use sources or quote others when tweeting. This variance suggests that perhaps institutional journalists have an ingrained notion to use sources, whereas bloggers do not. The second highest chi-square noted among tweet frequencies was the race opinion category, with a chi-square value of 10.35. Thus, race opinion was a large

difference between the two groups. Again, such a difference suggests some institutional-level constraint for organization-affiliated journalists to report less opinions. Driver opinion and tweeting to fans had the third and fourth highest differences, noting that again, opinion and fan interaction were more the domain of bloggers than institutional journalists, which suggests that, in looking at institutional journalist routines, such categories are not endemic to their jobs, whereas bloggers do not have the same constraints.

Retweets were coded twice, once as a retweet and once for the subject of the retweet. Retweets represented 8% of all tweets. A qualitative review of the retweets showed that many of them were quoting other sources. For example, @NASCARwxman was used as a source for many retweets about the weather, which was a major story line in two of the three Daytona 500 races in this study. In 2012 the race was rained out on Sunday and moved to Monday, a highly unusual occurrence during any race weekend. The 2014 Daytona 500 included a tornado warning and the evacuation of the grandstands, with a delay of four hours. Although the retweets were not parsed further for this study, other studies have looked to retweets as credibility builders (Boyd, Golder & Lotan, 2010). Boyd, Golder and Lotan (2010) assert in their findings of Twitter user retweet choices that retweeters take authorship and attribution into account. In other words, a retweeter will choose to align herself or himself with the original poster. So, a NASCAR weather forecaster is an authority that a journalist will look to as a credibility-builder when retweeting. Interestingly, the retweet percentage of this study, 8%, was much lower than a social TV study by Buschow, Schnedier and Ueberheide (2014) who found that 26.4% of all second screen activity was retweets. Thus, an important consideration in this study is the context of the research sample, who are already viewed as opinion leaders, rather than a general population including

fans, who may retweet more often, perhaps with the same credibility and attitude alignment factors that the boyd, Golder and Lotan (2010) study reported.

One important aspect of the retweet content from this study is that celebrities unaffiliated with NASCAR were retweeted. Rapper 50 Cent, country singer Brad Paisley and country singer Blake Shelton were retweeted commenting positively about the race, such as Brad Paisley's tweet in 2012: "@NASCAR I like this whole Monday night thing. Get Hank Jr. in the studio, let's cut a theme song and make it official." Although there were no noted brands retweeted during the race, celebrities help bring status to the sport and offer insights into the authority and alignment of retweet choices, per boyd, Golder and Lotan's (2010) research.

Reliable sources are often the networks, weather experts, and less frequently other journalists. These sources interestingly appear both in retweets and in visuals. The screen captures of the weather radar during the Daytona 500 demonstrated credibility and information sharing by the institutional journalists. Additionally, tweeting to other journalists was the ninth most popular content category among institutional journalists, with 79 tweets. While not in the top half of category frequency, tweeting to other journalists does show proof of professional relationship and also demonstrates status as a fellow live tweeter in this new instrumental use, similar to mimicry.

One interesting finding of this study, viewed qualitatively, is the loyalty institutional journalists showed their employers, or not. It was noted that if there was a content link to a new story or site, it was either to a visual that the journalist took herself or himself, or it was to the journalist's company web site, such as ESPN.com or MRN.com. However, blogger Jayski retweeted MRN and FOX but is affiliated with neither. Jayski is an ESPN partnered blog, but he does not hold any contractual obligations to EPSN, per his blog description. Although Jayski was

the only blogger with a competing affiliation to tweet a differing affiliation's news, it is precisely because he is a blogger that his retweets of competitors bears notice. Professional constraints would likely prohibit institutional journalists from retweeting competitors.

Television journalists Mike Joy, Chris Meyers, Larry McReynolds, and Darrell Waltrip used Twitter more frequently as the years went by, and to interact with fans. One possible reason for this could be from institutional pressure, via employer pressure. Social norms in institutional journalism have already shown via this study that a Twitter presence is required, but an unknown from this study is what compelled the in-booth television broadcasters to tweet more frequently with each passing year. The unusual circumstance of the 2014 Daytona 500, with a four-hour rain delay, is a possible explanation for increased tweeting, and indeed, Mike Joy tweeted with fans 20 times during the rain caution, which he would likely not be able to do while following the race play by play. Indeed, Dustin Long of MRN used the same lengthy caution in 2014 to have a Twitter chat with fans.

Many journalists showed their personality in their tweets, which speaks to branding aspects of the study that stand in contrast to institutional theory premises. Institutional journalists were not shy to share their opinions of their favorite drivers at times, which contradicts the priority that journalists are supposed to give to objectivity. David Newton said in 2012 while watching Dale Earnhardt Jr. race, "THAT move is why I picked the 88. He can race how he wants to race." Other journalists chose to defend drivers, like FOX's Wendy Venturini who replied to a fan, "Bet u can't drive a 3400 lb stock car," in reply to fan @muthluv43906's tweet, "Danica continuing to set women back in sports one race at a time."

Bloggers showed personality in their tweets in what could be called brazen personal ways at times. "I've had about 5 too many beers during this race so I'm gonna stop tweeting before I

tweet something I shouldn't!" said blogger Shaun Burke during the 2013 Daytona 500. Queers for Gears often used humor in his tweets, as a glance at his profile suggests when he notes, "NASCAR and Motorsports from a queer perspective... I've been told by some that I give good tweet." He often provided analysis with a humorous twist that touched on his persona, with tweets like, "Rain then fire... where's the brimstone?" and "I see your pothole and raise you melted asphalt" in 2012. Queers for Gears also touched on non-NASCAR but sports-related issues such as Michael Sam's draft, noting, "Big news for all of us – one day at a time."

Some tweet tendencies may depend on journalist circumstances. For example, Mike Bagley had health problems and missed the 2013 race, sending a tweet saying, "Thank you for thinking of me, doing OK," while Pete Pistone notes that he is taking over for Bagley in his Twitter feed by saying, "Filing in for @Themikebagley get better man." In 2012, FOX's Chris Myers stayed home after the death of his son. Though Myers did not tweet, Mike Bagley of MRN sent a tweet saying, "We miss you Chris Myers and are thinking of you." After the injuries sustained in the NASCAR Nationwide race in 2013, Pistone tweets before the NASCAR Sprint Cup race that he is "heading to the track but telling it like it is – my heart's not in it and the enthusiasm for the race has diminished." Pistone does not tweet at all during the race, but was vocal pre-race about both Mike Bagley and the fans who were injured the day before.

Three institutional journalists actually specified that they look forward to interacting with fans by inviting Twitter users to tweet them. Mike Joy of FOX tweeted at the beginning of a lengthy rain delay in 2014, "What do you think about the race so far?" and Joy took the time to respond. Dustin Long also advertised a back and forth with fans in 2014 by tweeting, "#AskMRN why not have a Twitter chat while we wait? #MRNRadio." Lastly, although the pre-race Twitter activity was not a part of this study, it is interesting to note that Jeff Gluck

advertises tweet-ups before each race on his Twitter profile and encourages fans to “make the event accessible,” as he says. The willingness of institutional journalists to speak with fans is a unique opportunity unavailable pre-Twitter that demonstrates a deviation of institutional behaviors that are tied to the instrument of Twitter and therefore add a fascinating element to the evolution of live event reporting, as interactivity allows for immediate analysis of the race.

Another Twitter phenomenon came from FOX’s Jeff Hammond. He tweeted twice in 2013 during the middle of what was being called a “boring” Daytona 500 on Twitter by fans. However, the race had received significant coverage ahead of time because Danica Patrick was the first female driver to be on the pole, generating increased public and general media interest. In addition to the relative “boring” race, the mood was subdued after the fan injuries the day before. Both of Hammond’s tweets are positive for watching the race on FOX, saying, “There is a lot of race action! Looks great!” and “Who will win? Tune in to FOX.” The tweets suggest that Hammond had sensed that there needed to be excitement generated for the race, rather than engaging with fans or providing information. Thus, Hammond represents another new avenue in Twitter use, promoting the live race. This would also be a deviation from institutional norms wherein the marketing department would have been responsible for generating interest in the television ratings ahead of time, and not necessarily during, the race.

Undeniably, Western society has shifted toward an interactive mediated event experience with the advent of social media. While the Hammond discussion above is indicative of promotion, it is also in the context of awareness of the second screen, or that there would be fans watching their Twitter feed while simultaneously watching television. Other institutional journalists and bloggers acknowledged the second screen, including *Queers for Gears*, who commented on commercials, such as noting, “Aw thanks now I need a Coke, Coke,” to *Sporting*

News' Jeff Gluck, who mentioned that the continuous FOX racing, showing both the race and the commercial on the same screen, was going to occur after the halfway mark of the race. "Side by side coming up," noted both Gluck and Dustin Long, in a nod to those fans watching at home. Second screen Twitter use has already demonstrated increased revenue for Twitter, and in turn, visibility for institutional journalists could lead to advertising revenue for their employers, and thus, the financial incentive aligns with the audience incentive to maintain a second screen presence in the foreseeable future.

It is important to note that second screen is an audience-centric phenomenon, considering audience participation in television viewing. Institutional journalists and bloggers thus would be acknowledging the second screen in order to engage fans and other stakeholders in an event, but the second screen is not a salient aspect of journalist job duties. While second screen tweets were not a focus of most of the institutional journalists in the study, adjustments in journalist rhetoric acknowledging the second screen would be a likely expectation.

Limitations and Considerations for Future Research

This research contributes empirical evidence of several attributes of institutional journalism in the interactive media era, but there are some limitations of the research to consider as well. As data-driven research continues to increase, with lengthy data trails left by media users awaiting researchers, this study serves as an early look into institutional journalist Twitter use that will very likely grow in the near future. Longitudinal studies are just recently emerging that demonstrate how data shift over time on social media such as Twitter to predict behavior and routinization of online actions, and thus the limitations of this study will assist future scholars.

The first limitation is inherent in the data collection and use, which limits the ability for a "complete" data set. The data was collected primarily via screen pulls from Twitter. Twitter uses

an algorithm to show “top tweets” in its feed, and thus it is likely that not all tweets were pulled from the feed. This has been a persistent problem in Twitter studies, as Lewis, Zamith and Hermida (2013) note. They observed that the only failsafe way to assure that there is an entire data set on Twitter is to either request a data set from Twitter, which requires an application process and is limited in that Twitter gets to decide who receives complete data sets. Considering the time and likelihood of receiving a data set from Twitter, Lewis, Zamith, and Hermida (2013) note that hand-collected data sets for Twitter studies are, for now, the norm, but will likely not be truly complete data sets. Thus, although stop gaps such as reviewing Twitter aggregator Topsy and attempting to pull a search history of a journalist’s Twitter account were employed to ensure as thorough a sample as possible, it is likely that this data set has most, but not all, of the tweets on the four days of racing (as the 2012 Daytona 500 was over the span of two days).

The method used for gathering Twitter data, however, is likely still a popular one for future studies, but future scholars might consider allowing time to petition Twitter for complete data sets. If that is not a possibility, another idea would be to have multiple researchers open multiple dummy Twitter accounts and pull the data simultaneously, and then cross check the data for duplication. It is impossible to know if Twitter includes all of the tweets in its live feed, as its algorithms are secret, but the above two listed methods should be considered to assure that the Twitter is as complete as possible.

A second limitation concerns the dynamics of the Daytona 500 itself. The 2012 and 2014 Daytona 500 races had extensive delays due to weather, including an unprecedented evacuation for a tornado warning in 2014. The 2012 Daytona 500 also included a 90-minute delay for a jet dryer fire, causing NASCAR to red flag the race, parking the drivers and attending to track repairs. These delays would certainly affect journalist tweeting behaviors, with extended

downtime. The 2013 Daytona 500 was held the day after a stock car became airborne and flew into the grandstands of Daytona International Speedway, damaging the protective fencing on the frontstretch and injuring almost 30 fans. There was speculation in the afternoon that the next day's race would be canceled, but NASCAR gave the go ahead for the race, and at the green flag drop, there were still fans in the hospital recovering from their injuries. Such events affect Twitter activity, as noted by journalist Pete Piston in 2013 who tweeted that it was with a heavy heart that he was even there, and had lost his enthusiasm for the race. All races will have their own unique circumstances causing tweet differences, however these three races had egregious circumstances that limit the generalizability of the results.

Some of the content categories used for this study, while purposeful and useful for this study, could easily be parsed for future studies to explore various aspects of each category. For example, retweets could be exclusively studied and credibility could be measured based on retweet choices, similar to research by Lotan, et. al. (2011), or the photos and content links could be subdivided and studied for patterns as the unique aspects of social media offer broader choices about sharing activities that would provide interesting fodder for considering Twitter use in a different way. The field of visual communication has several opportunities to explore the context behind photo sharing choices, and video studies would be an important future research possibility, as video and photo sharing both comprise growing percentages of social media use.

This study looks at three years of data to determine support for institutional theory and specifically Lowrey's news ecology model. A longer data trail will provide more robust insights into journalist behaviors, and thus a future study continuing the findings of this data would offer a more cohesive focus long term. Twitter has been shown to be a first source when learning about current events, often outpacing traditional media outlets for breaking news (Lotan, et. al.,

2011), and thus it is not likely that Twitter's influence will diminish right away. While other social media, such as Facebook, have made aggressive attempts to gain market share of breaking news information from journalists, Twitter remains the more important social media for immediate event sharing.

An important next step in this dissertation's findings would be to interview journalists and bloggers to learn the "why" behind their tweeting decisions. First person insight into the real-time event sharing choices that journalists and bloggers make, including the timing of tweets, the use of Twitter as story notes, and the desire, or not, to engage fans and be present on Twitter would offer important context into how this medium is a tool of the trade.

NASCAR as a sport can use this study for further research in the way journalists are interpreting the races and in the way the sport itself can use the second screen via Twitter in a public relations capacity. If there are journalists and fans converged in a space processing the live events, NASCAR would likely want to be a part of this discussion. Public relations efforts would not just include participation in the live race action but listening. Advertisers likely would also want to see how their purchased sponsorships are seen by audiences, and possibly move some advertising discussions to Twitter, altering the conversation space further. An unknown is whether fans will accept such perceived intrusions on their second screen experience, but it is likely that NASCAR and brands are eager to be a part of such interactive possibilities.

Two recent events in the months surrounding this dissertation demonstrate continued viability of Twitter as a journalist and current event tool. When Dale Earnhardt, Jr. won the 2014 Daytona 500, he noted that the first thing he would do was open his long-anticipated Twitter account. On February 24, 2014, Dale Jr. shared a selfie (self-taken photo) with the caption, "Tonight seemed like as good a night as any to join Twitter. How is everyone doin'?"

#2XDaytona500Champ.” The Twitter handle @DaleJr had 235,000 followers in anticipation of his using the account, and within three days, @DaleJr had over 300,000 followers. Secondly, on August 9, 2014, Tony Stewart hit a fellow driver, Kevin Ward, while Ward was walking out of his car during a dirt track race. The incident occurred on a Saturday evening, and by Sunday morning Twitter had received heavy traffic regarding the incident. Raw video footage from the event was uploaded, people called for Stewart’s arrest, accused him of intentionally hitting Ward while others defended Stewart and said that Ward should not have left his car. Others defamed Kevin Ward for walking toward Stewart while others on Twitter used ill-timed jokes such as @kmchotoftheday: “Why did the chicken cross the road? He didn’t he got run over by #TonyStewart.” Tweeters debated Stewart’s culpability throughout the day, as the topic trended for over twelve hours. These two incidents demonstrate Twitter’s power as a breaking news and sporting event forum, which is encouraging for continued relevance of the medium.

It is unknown if Twitter will continue to maintain its dominance as the most viable social medium for breaking news and second screen event sharing, as advertising revenue is a tempting carrot to many, and even though there has not yet been a second screen or breaking news app that has been able to garner much traction with broad audiences, there will certainly be more attempts. Should Twitter cease to be as viable a social medium as it is now for live journalist interaction, this study can be applied to the same premises on other social media as well.

Conclusion

This study provides longitudinal support for the news ecology model and demonstrates variances and similarities in Twitter reporting behavior by print and online institutional journalists, bloggers, and television/radio broadcasters. It is important to note that in the three years of study, Twitter remained an active and important social media outlet for these entities to

be a part of. Thus, it is likely that Twitter will remain a force in second screen live sporting event viewing for the foreseeable future, though new media, particular mobile media intended for moment to moment event sharing, continue to proliferate. As smartphones and tablets become a more ubiquitous part of daily life, Twitter's ease of mobile use will continue to make it a top choice for live event sharing.

Also, as modern journalism continues to evolve, it seems likely that a hybrid live sharing/deadline story format will continue to be the norm for the time being, with an even further shift toward live event sharing as vested parties continue to seek news as it happens. Thus, this study should serve as one early research example in this evolving process.

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