

Twitter Analysis of Tweets that Emerged after the #Wacoshooting

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Abstract

This study analyzes the tweets that emerged following the Waco biker incident of 2015. Findings indicate individuals used Twitter to take a stand on the highly publicized incidents surrounding the shootout. Thousands of tweets emerged with popular hashtags to identify the case such as #wacoshooting, #wacobikers and #wacothugs, #Ferguson, #whitebikers, #blacklivesmatter and #Whiteprivilege. Responses to the Waco shootout were polarizing with individuals weighing in on Twitter to show support or scorn for the bikers, city officials, law enforcement and attorneys. Themes of race surfaced in tweets about the event as it occurred in the midst of the #Blacklivesmatter movement. Twitter users compared bikers to the movement, using tweets and graphics to illustrate various points. The Branch Davidian incident also provided an important backstory to the biker incident. Images of the fiery burning of the Branch Davidian compound, which occurred decades earlier, were still on people's minds as evidenced by tweets that characterized the incident as "just another Waco tragedy."

INTRODUCTION

On May 17, 2015, gunshots turned a motorcycle club meeting into a scene of chaos in Waco, Texas, that made international headlines. Nine men were killed and 20 were injured in the brief shootout that was halted after police intervention (O'Neill, Lavandera & Morris, 2015). In the aftermath of the chaos, police arrested 177 bikers and charged them with engaging in organized crime, with bail set at \$1 million each. This caused outrage from some members of the public, especially those who supported the bikers and claimed police overreacted to the shootout and did not provide truthful information to the media and public. After recovering 480 weapons, however, police officers believed they responded in the best interest of public safety.

Right after news of the shootout surfaced, Twitter was afire with tweets linked to various issues. Other bikers stepped forward to defend biker clubs as organizations like any other hobby club (O'Neill, Lavandera & Morris, 2015). Questions of corruption and a police cover up also emerged as individuals questioned why so many bikers had been jailed and why the video had not been released. Race was also a prominent theme. Tweets referred to #blacklivesmatter and compared #ferguson to the #WacoShooting. Shaun King tweeted: "I'll wait (and wait and wait and wait) to hear someone on the news call what just happened in Waco 'white on white' violence." Matt Pearce of the Los Angeles Times responded, "do we even know the race of the bikers yet?" In response, activist Deray Mckesson tweeted: "If they were black gangs, we'd

certainly know by now.” (Kohn, 2015). The Branch Davidian incident provided an important backstory to the biker incident. Images of the fiery burning compound, which occurred decades earlier, were still on people’s minds, as evidenced by many of the tweets that emerged. People characterized the incident as “just another Waco tragedy.” An AP article characterized Waco in this manner following the biker clash (AP, 2015):

From a series of Ku Klux Klan lynchings nearly a century ago to a massive twister in 1953 that tore through downtown to the Branch Davidian siege in 1993, Waco’s downtown streets, a mix of historic mansions, public buildings, dilapidated houses and empty spaces where nothing was rebuilt, reflect a city perpetually recovering from its last disaster.

The events surrounding the Waco biker incident are particularly significant in today’s new media environment. The influx of user-generated content following the incident offers the opportunity to study how citizens framed the event. Twitter provided a platform to retrieve and analyze fragments of public opinion to in turn develop overarching themes that people were beginning to make in regard to the shootout.

To analyze the Twitter content that emerged following the shootout, this study applies computational and machine-learning techniques. While social media platforms such as Twitter provide a possibly large fountain of data for us to analyze, the sheer size and frequency of this information makes analysis difficult. In the past few years, there have been a few scholars working on building computational tools to automatically analyze tweets (e.g. Blei, D., Ng, A., & Jordan, 2003; Hong & Davidson 2010, Yang, Ghoting, Ruan & Parthasarathy 2012; Goonetilleke, Sellis, Zhang & Sathe, 2014; Yin & Wang 2014; Zangerle, Schmidhammer & Gunther 2015). The incorporation of computational techniques towards analysis has mutual benefits: on one hand, the tools allow analysis of a much larger scale. On the other hand, having a real-life study allows computer science scholars to provide feedback on the emerging computational methods for validation and for improvement.

LITERATURE REVIEW

To help guide this study, we look to three streams in the literature: (1) media framing in general, (2) frames and social media and (3) mass media stereotyping of bikers. Framing refers to “the process through which individuals or groups make sense of their external environment” (Boettcher, 2004, p. 332). In his landmark study, Entman (1993) discussed how journalists embed frames within a text and thus influence thinking. He defined the term by noting that “to frame is to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation” (p 52).

Studies generally support the idea that journalists and editors select, package and disseminate news, mediating it through organizational processes and ideologies (Watkins, 2001). The basis of framing theory presumes the prevalent media will focus attention on newsworthy events and place them within a sphere of meaning. Frames often emerged in metaphors, exemplars, catchphrases, depictions and visual images (Gamson & Lasch, 1983). In this incident, representations of race, the Branch Davidian standoff and bikers emerged as people struggled with how to perceive the incident.

Biker Frames and Stereotypes

Previous studies indicate bikers are framed in a dichotomous manner—either as thugs known as “one-percenters” or as “just average people.” One-percenters, or outlaw bikers, are “radical” individuals who partake in illegal activity (Kontos & Brotherton, 2008). Among the first biker gangs were the Hells Angels, founded in Fontana, California, in 1948. Movies often depict Hell’s Angels as participating in the outlaw culture (Hollandsworth, 2015). Some outlaw motorcycle clubs can be distinguished by a 1% patch worn on their jackets or vests—which signifies that 99% of motorcyclists were law-abiding citizens and the remaining one percent were outlaws. The Bandidos refer to themselves a one-percenter biker club, according to the New York Daily News.

These representations date back to World War II, when veterans returning from overseas started buying motorcycles with their severance pay (Ross, 2015). For men who were used to the friendship of wartime, the lifestyle was a natural fit. Some accounts indicate biker gangs served a function like churches, social clubs and families, allowing members to belong to something larger than themselves. Veterans who felt isolated from the mainstream American culture found security in the company of their peers. (Ross, 2015).

Following the shooting in Waco, citizens framed bikers as gang members or law-abiding citizens. Some individuals asserted that Waco authorities unfairly labeled all bikers who were at the Twin Peaks restaurant in an attempt to frighten citizens and bolster claims of criminal activity. However, most of those arrested claim to be law-abiding people who are members of veteran and Christian groups. Waco police officers defended their decision to arrest every biker at the scene, many of whom were carrying weapons and charged them with engaging in organized crime in the capital murder case (Tsiaperas, 2015). Police said a simmering “turf war” exploded when one gang showed up “uninvited” to the Confederation of Clubs.

According to news reports, seven Cossacks and one Bandido died on the day of the Waco shootout at the local Twin Peaks Restaurant, which closed its doors days later (Schiller, 2015). The other person to die was not affiliated with either the Cossacks or Bandidos. The Bandidos are the “largest and most powerful motorcycle group in Texas,” according to the Department of Justice. Established in 1966, today they have more than 2,000 members across the country, and they claimed in a police report that the Cossacks were not invited to attend and showed up anyway (O’Neill, Lavandera & Morris, 2015). The Waco biker conflict may have stemmed from Cossacks members refusing to pay Bandidos dues for operating in Texas and for claiming Texas as their territory by wearing the Texas bottom rocker on their vests (Ford, 2015).

“The Bandidos are the biggest motorcycle gang in Texas, and they do not allow other motorcycle gangs to enter the state. They will allow other motorcycles clubs to exist, but they are not allowed to wear that state bottom rocker. If they do, they face the onslaught of the Bandidos,” Falco told CNN’s Sara Sidner (Ford, 2015). The bottom rocker refers to a state name on the back of a biker’s vest. According to Falco, it can indicate where someone is from, as well as claim territory for that club (Ford, 2015).

TWITTER AND FRAMES

When looking at the framing of an incident, it is worth looking beyond traditional media as audiences are increasingly relying on social media for news. In recent years, Twitter has become a source of breaking news in which anyone can share information in 140 character tweets, or follow news and mark their own stories with hashtags to make them more searchable. Twitter has become an inexpensive and convenient way for journalists to gather

news and information (Broersma & Graham, 2013). Twitter often triggers news stories and plays a role in what is covered.

A small body of literature suggests that individuals use Twitter messages to frame issues. Most of these studies are concerned with identifying frames related to a particular event, often examining dominant frames used in the discussion of a theme and in many cases, researchers look at how individuals are discussing an issue (Choi & Park, 2014). As with traditional media, journalists tend to rely on six dominant frames in Twitter conversations: conflict, human interest, economic impact, responsibility, morality and technology (Waiske, 2013). Theoretically, Twitter, as any other communication venue, allows individuals and groups to use frames to emphasize particular considerations over others (Meraz & Papacharissi, 2013). "The Internet has accelerated the circulation of ideas, facilitated vast social networks, and altered economics of media by enabling the distribution of free content" (George-Palilonis, 2012, p. 7).

Citizen journalists, have taken to publishing on the web as well, many times using traditional reporting as a jumping off point for publics, to discuss their stories and many cases, defend their points of view. This entire engagement, from private network to public conversation, creates a real-time feedback loop for journalists, one that couldn't exist before the Internet and emerging world of social media. (George-Palilonis, 2012, p. 9)

Twitter was relevant to this study as tweets not only employ framing devices but can also be shared easily, even among those who are not in connected through the social network. This means that frames can spread quickly, and that many frames are likely competing with one another. Ampofo, Anstead and O'Loughlin (2011) describe how hashtag use allows the development of many-to-many communication, even among those who are strangers. On Twitter, an individual contributes to or views a larger conversation that goes beyond those in his or her own network. Many hashtags, or frames, may originate from elites, but other studies have found that most Twitter users are not engaging with traditional elites and are instead getting political information indirectly from others (Nielsen & Schroder, 2014; Nielsen & Vaccari, 2013).

Tweets posted following the Waco biker incident are noteworthy as mass media messages influence the construction of the racialized condition in which we live. It is often through media images that people negotiate identities, ideas, and relationships with other people (e.g., Hall, 1980; Enriques, 2001; Ono, 2009). Furthermore, media analyses built upon historical theories are important in any media environment because mass communication sends viewers, readers, and listeners' hidden messages that suggest a story's importance. Media ultimately suggests people's value and their place in a hierarchy within social structures. The differences in people's culture, race, religion, class, and gender influence how they write stories, what they share and post on social media platforms as well as how they perceive media coverage of various issues. This is significant, according to Gans (1979), because the majority of journalists come from an upper-middle- to upper-class background, which he asserts most often offers a distinctly white, male perspective. Likewise, Dates & Pease (1994) assert that the norm in this country is that the perspectives of white, mainstream men generally create the lenses through which America, whether peripherally or directly, views race, and itself.

When looking at frames, it is worth looking beyond traditional media as audiences are increasingly relying on social media for their news. Social media provide hope as offer a

platform for alternative voices. Black Twitter, for instance, offers an outlet for Black people to express their ideas and opinions publicly (Williams, 2015). This is important as Twitter has become a necessary platform for dissent, discussion, breaking news in the last three years. “Black Twitter,” has created an online culture of black intellectuals, trendsetters, and talking heads giving voice to many of the issues that 20 years ago would have remained far away from the mainstream radar (Williams, 2015). He adds:

The murders of Trayvon Martin and Mike Brown, the reality of street harassment, the racial crisis brewing in the Dominican Republic—these are all stories that became of major importance because Black Twitter made sure the world understood what was happening. And with popular hashtags like #YouOKSis and #BringBackOurGirls becoming recognized all over the world, it’s impossible to ignore how Black Twitter has been able to affect change and raise awareness.

While African Americans still access the internet at lower rates than the general population, those on the internet are more likely to use social networks such as Twitter, according to 2012 surveys from the Pew Research Center (Perrin & Duggan, 2015). However, the digital gap separating African Americans from other ethnic groups for the Internet is narrowing (Perrin & Duggan, 2015). Also worth noting according to a 2015 Pew study, the percentage of African Americans online who use Twitter is higher than the population overall with 28% of Blacks reporting they use it compared to 20% of white respondents (Duggan, 2015).

The Twitter platform is important to study as it has become an inexpensive and convenient way for journalists to gather news and information (Broersma & Graham, 2013). Twitter often triggers news stories and plays a role in what is covered. Broersma and Graham (2013) argue this new practice alters the balance of power between journalists and sources as Twitter triggers news coverage and reporters increasingly gather information online and embed it in journalism discourse as the Twitter platform can alter critical discourse on controversial themes.

Building on this review of the literature, this study addresses the following questions:

RQ1: What types of frames emerged in Twitter coverage of the Waco shooting?

RQ2: What was the “tone” of the tweets of the Waco shooting?

METHODS

We used a mixed-methods approach to look at individual tweets to assess the presence of frames (Diagram 1). Using the keywords “Waco Shooting,” 5,000 tweets were collected via Twilert up to one year after the incident. Twilert is a Twitter search tool that collects, stores and sends users email alerts of tweets containing any keyword they choose. We chose to study the Twitter platform because tweets were commonly shared across social media platforms. They also provide a snapshot of what Americans cared about during the incident.

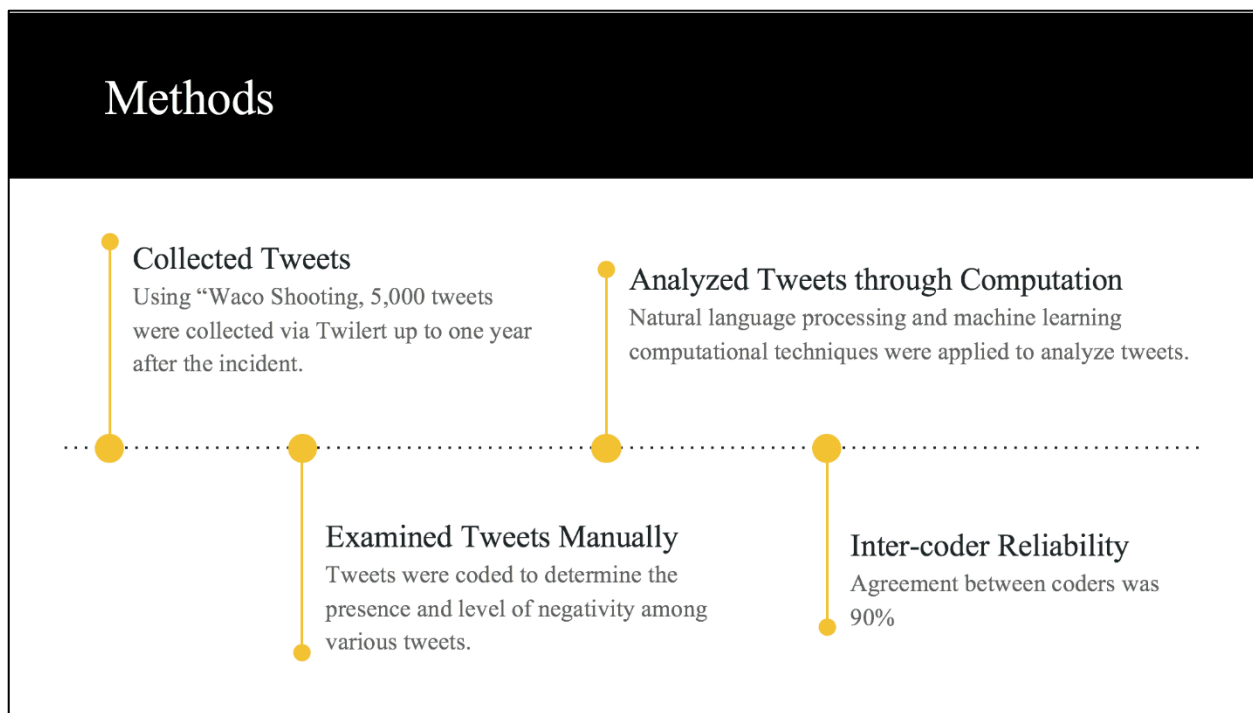


Diagram 1: Visual representation of methods used for this analysis.

For this particular study, the content analysis provided the framework for understanding the way in which citizens framed the Waco biker incident. The textual analysis revealed the underlying social messages embedded within the tweets. Using both content and thematic analysis for this study offers a look beyond the surface of citizen framing of the incident together, they reveal the underlying messages and narratives about the incident. First, an initial analysis was conducted to determine the primary frames that were present in the study sample. Six graduate students coded approximately 500 tweets, which was ten percent of the sample. Secondly, we applied computational techniques—specifically natural language processing and machine learning—to analyze the tweets. To determine inter-coder reliability for content, researchers used Cronbach’s alpha, which measures how well a set of variables measures a single construct and reliability or consistency. Percent agreement was 90% for themes.

The initial textual analysis revealed the following themes: 1) bikers are just another social club (just regular people), 2) bikers are menaces to society such as rapists, molesters, criminals, 3) cover-up/corruption/bad cops, 4) bikers were treated better than recent Black victims vs. biker were treated worse than recent Black victims, 5) this is another Waco tragedy, 6) white-on-white crime, and 7) whiteprivilege vs. #Blacklivesmatter.

Next, the researchers applied computational techniques to examine the tweets to discover the dominant themes in our sample. We used this approach as computational techniques enable us to analyze a large number of tweets efficiently. Also, the results can be sent back to us to interpret to ensure what the techniques make sense. In this case, we applied techniques from the field of “theme modeling” (Biel, 2013) to discover the themes/themes in the tweets. First, we preprocessed the tweets by removing retweets and duplicates. We also removed a list of stop words (preposition, pronouns, articles etc.) from each tweet. Since all of the tweets are about the Waco shooting, we further removed the terms “Waco,” “shooting,” “#wacoshooting” from the data set. We also noticed the term “bikers” appeared in a very large number of tweets,

so we removed it from the tweets to allow the method to highlight other less frequent but possibly more important terms. After these processes, we ended up with 2,702 tweets.

We then applied a computational method known as Latent Dirichlet Allocation (LDA) (Biel, Ng & Jordan 2003) to discover the themes for the tweets. The method assumes that the set of tweets is associated with a set of themes represented by the probability that each tweet corresponds to each theme. Different themes were presented by different terms modeled by the probability that each word is used by each theme. LDA was used to analyze the input set of tweets and to discover the themes by estimating the probabilities. After that, each theme is represented by the set of words most associated with it, and each tweet is associated with one or more themes. This methodology allowed us to group the tweets into themes that closely resemble the frames identified in the initial examination by the students and primary researcher. The LDA analysis added a quantitative component to the study and identified some themes that were not included in the initial textual analysis such as “bikers were held forever with no official charges,” “references to the McKinney pool party” and “financial references to President Obama giving police officers a raise for killing bikers.”

FINDINGS AND DISCUSSION

Sociopolitical Background

The deaths of Michael Brown and Eric Garner were still fresh on people’s minds as were images of the fiery burning of the Branch Davidian compound, which burned decades earlier. These factors combined to provide to the perfect foundation for this critical analysis of the framing of the 2015 Waco biker case. In response to the Waco biker clash, citizens merged race-related events, biker stereotypes with memories of previous Waco tragedies to characterize the incident. Immediately following the event, #wacothugs and #whiteonwhitecrime trended on Twitter with columnists around the nation debating the differences in how the bikers were portrayed in comparison to Black men recently killed by White police officers. Individuals commented that the incident was not used to discuss other issues about families, poverty and crime, media critics, columnists and civil rights activists. For instance, radio and TV commentator Roland Martin pointed out on Facebook that the mainstream media refused to talk about #WacoThugs. He noted that there were “No panel discussion on their childhood? Fatherless homes?” (Holland, 2015).

In Waco, the words used to describe the participants in a shootout so violent that a local police spokesman called the crime scene the bloodiest he had ever seen included “biker clubs,” “gangs” and “outlaw motorcycle gangs.” While those words may be accurate, they lack the pathological markings of those used to describe protesters in places like Ferguson, Mo., and Baltimore. President Obama and the mayor of Baltimore were quick to use the loaded label “thugs” for the violent rioters there. That the authorities have not used that word to describe the far worse violence in Waco makes the contrast all the more glaring” (Blow, 2015).

Blow (2015) adds that the words “outlaw” and “biker,” while pejorative to some, still evoke a certain romanticism in America. They conjure an image of individualism, adventure and virility. There’s an endless list of motorcycle gang movies. He adds that while a search for “motorcycle romance” on Amazon yields thousands of and depictions; characterizations of the term, ‘thug life,’ are limited and often racialized” (Blow, 2015).

Citizens also used the context of the #BlackLivesMatter movement to frame the incident, which occurred while the deaths of Michael Brown and Eric Garner, two Black men killed by White police officers, were fresh on the minds of many Americans (Bruinius, 2015). The conflict in

Waco raised questions about perceptions and portrayals of crime in America, considering the heated reaction that police gave the earlier protests (Holland, 2015). Many journalists and citizens asserted that a double standard exists with respect to the Baltimore/Ferguson incident and the recent Waco biker shootout. There was a perception that bikers involved in the Waco, Texas, shootout were treated differently because they are white. Journalists, columnists and citizens posed the frequent question what if they had been black?

Other individuals noted that the tone of the rhetoric the media used to describe this event were in stark contrast to the language used to describe the protests over the killings of black men by police officers. For instance, Bruinius (2015) highlighted photos showing the gang members sitting at their ease, texting, near police officers in the immediate aftermath of a shooting that a local police sergeant called “the worst crime scene, the most violent crime scene I have ever been involved in.” He added that some individuals have asked if that would have been the case if the rival gangs had been in some big city, “dressed in gang colors and hoodies, having brass-knuckled, stabbed, and shot at each other—and police.” Bruinius (2015) also noted that media coverage featured little talk about whether subcultures of violence and masculinity are bred in the type of restaurant where the shootout took place that features waitresses with ample cleavage and barely-there shorts.

Would that have been true if it had happened at a hip-hop gathering or an urban strip club? To many, such attempts to compare the melée in Waco with the civil unrest in Baltimore or New York or Ferguson, Mo., strains reason and evidence. What happened in Waco was in no way a riot. It was a deadly bar fight, plain and simple (Bruinius, 2015)..

In her examination of the Waco biker shooting, Stranahan (2015) compared coverage of the bikers and Black Lives Matter activists, including tweets and graphics to illustrate her point. The author states, “One of the biggest takeaways from the incident may be the nationwide media blackout on what could be the biggest story of police misconduct in 2015.” Stranahan (2015) adds there is racial media bias when reporters select certain stories to pursue and how they choose to write them. Kutner (2015) describes the different ways media framed the event using words such as “riot.” The author alluded to inequalities in the way the media covers events where race is a factor. Holland (2015) provides this summary of the prevailing images of similar incidents in comparison to the Waco biker shoot out.

Protests in Baltimore and Ferguson, Missouri, over police killings of black men were of police in riot gear, handcuffed protesters, tear gas and mass arrests. The main images of a fatal gun battle between armed bikers and police in Waco, Texas, also showed mass arrests — carried out by nonchalant-looking officers sitting around calm bikers on cellphones.

Our Analysis

The most popular category was Theme 10 (Table 1), which frames members of the Waco police department as hiding the video footage and other information regarding the shooting (403 tweets, 14.9%). Many tweets stated, “no video. DA unable, needs to release the video from CCTV and dashcams.” Also common was Theme 9, which emphasized that the Waco Biker shooting was the most violent crime scene ever (369 tweets; 13.7%). Tweets stated the Waco shooting Waco biker gang shootout involved Bandidos and Cossacks and the Waco shooting latest chapter in bloody history of Bandidos biker gang Waco shooting.

Table 1: Themes for the #Wacoshooting hashtag

Themes	Frequency	%
Theme 10: Waco Police what are you hiding in the no video.	403	14.9149
Theme 9: The most violent crime scene ever	369	13.6566
Theme 4: There is a double standard in white-on-white violence	365	13.5085
Theme 6: Cops killed innocent #bikers	299	11.0659
Theme 5 : Cover-up and corruption/ police brutality/ cronyism	276	10.2147
Theme 2: Texas Legislature set to relax Texas gun laws	255	9.4375
Theme 8: Refers to the McKinney Pool Party	195	7.2169
Theme 7: Obama gives 14 cops a raise for killing bikers in WACO	185	6.8468
Theme 1: Bikers held forever no charge	183	6.7728
Theme 3: Within the context of other shootings or events	172	6.3657
Total	2702	100.0003

The next most popular category was Theme 4, which highlighted that there is a double standard in white-on-white violence (365 tweets; 13.5%). One posted stated, “Reality Check? You never see a #Ferguson or #Baltimore Thug mugging a biker member!” Twitter users also compared representations on MSNBC, CNN and Fox news. They made references to racism and stated some journalists had no problem labeling blacks as “thugs” when its black-on-black crime. Theme 6 includes the theme of cops killing innocent bikers with 299 tweets (11.1%) falling in this category. Illustrating this theme, one tweet stated, “#OBAMA's” “Call's it COLD BLOOD MURDER, Worse than what he did in #Iraq for #BUSH #Baltimore.” Another tweet stated, “where were the #BlueLivesMatter people after the Waco biker incident. Do “blue lives” only matter 2 u when threatened by unarmed black people?”

Theme 6 closely aligns with Themes 1 and 5, which include references to cover-up and corruption/police brutality and cronyism (276 tweets; 10.2%). Members of the law enforcement team who handled the Waco biker case were depicted as crooked, corrupt or “bad cops.” Tweets frequently focused on the idea that police officers were covering up information that they did not want to share with the public. They also focused on cronyism or the idea the the police officers helped the bikers because they were related or friends. In addition to focusing on police officers’ tweets also characterized attorneys and judges and the court system as tampering with evidence. The idea of a “court conspiracy” emerged early in the case.



Diagram 2: Photo included in a tweet that refers to white privilege

For instance, one post that Twitter users frequently retweeted was, “Waco First Satire Safe Zone #coverup #corruption #PoliceBrutality #murder #NorthKorea #TwinPeaks.”

Theme 2 included the theme of the Texas Legislature and Texas gun laws and NRA issues with 255 tweets (9.4%) falling in this category. For instance, several tweets focused on the idea that scientists overwhelmingly reject the idea that NRA’s guns make our society safer. One post in this category joked, “Wondering if the @NRA can tell us which gang was the good guys with guns and which gang was the bad guys with guns. #Texas.” Other tweets emphasized the statistics surrounding the case: “192 arrested; dozens of guns confiscated. Meanwhile, #txlege set to relax #Texasgun laws.” Later, dialogue turned to the Texas Senate. Posts state the Senate “passes bill allowing #opencarry of #handguns days after #SECEDE.” Other Twitter users pondered how the Waco shooting might impact the open carry debate.

Other common themes include the idea that President Barack Obama gave police officers a raise for killing the bikers who died in the shootout. A total of 185 tweets (6.8%) fell in this category. Also common was Theme 1, which focuses on the idea that bikers were held forever with no formal charges. Twitter users discussed the length of time the bikers spent in jail. For instance, several commenters stated, “Guantanamo Comes to #WACO” (183 tweets; 6.8%). Commenters used hashtags such as #CivilRights #Lawsuit #BikerLivesMatter and #injustice. One tweet about a biker who was arrested linked to an article about a civil rights lawsuit he filed. He says he was illegally swept up in a police dragnet.

Theme 3 frames the event within the context of other shootings or events (172 tweets; 6.4%). Many citizens and media outlets characterized the events that erupted at Twin Peaks as the most violent bloodshed Waco had experienced since the tragedy of the Branch Davidian standoff in 1993. Theme 8 was closely related to Theme 3; however, it referred to the McKinney pool party, characterizing it as a #NEOLIB SETUP (195 tweets; 7.2%). One post states, “WHY did #SOROS pay protestors to FLY to #McKinney Why #ISRAEL not fly anybody to? #Waco170.” Theme 7 focused on the financial aspects of the incident and focused on the expense of the case. Tweets included, “#FederalReserve promises to ‘Cover’ #Waco for \$340M USD false arrest losses #JadeHelm” and “@AnonymousNTX #Israel owned #FBI/ #BATF/ #DHS promises to ‘Cover’ #Waco for \$340M USD false arrest losses.” Twitter users also used it as an opportunity to characterize President Obama negatively. For instance, one popular tweet stated Obama was going to give 14 police officers a raise for killing Waco bikers.

CONCLUSIONS

This study applies computational and machine-learning techniques to analyze the tweets that emerged following the Waco biker incident of 2015. Responses to the Waco shootout were polarizing with individuals weighing in on Twitter to show support or scorn for the bikers, city officials, law enforcement and attorneys. Thousands of tweets emerged with popular hashtags to identify the case, such as #wacoshooting, #wacobikers and #wacothugs, #Ferguson, #whitebikers, #blacklivesmatter and #Whiteprivilege. Themes of race immediately surfaced as the incident occurred in the midst of the #Blacklivesmatter movement. The “white privilege” frame, or the idea that bikers are getting away with criminal activities that black people could not get away with in society, was common (Diagram 2). Twitter posts questioned why the media had not fixated on ‘guilty whites,’ ‘thug dads,’ ‘absentee parents,’ and poverty. Some citizens concluded the media framed White crimes and drug use by the bikers who were arrested in a favorable manner. Tweets focused on the number of weapons that were recovered in the case and idea the media and society in general played down the criminality of

the Waco shootings. Twitter users also pondered why very little background information about the men had been released by the media.

This study is noteworthy as tweets not only employ framing devices, but individuals can easily share them, which means frames have the potential to spread quickly. It also indicates Twitter provides a great platform to retrieve and analyze fragments of public opinion to in turn develop overarching themes that people were beginning to make in regard to the shootout. In this project, we explored the interaction between human expertise and computational methods in order to improve them and to make the process more useful and adaptable. These techniques allow a significantly larger number of tweets to be processed in a very short time. Findings indicate individuals used Twitter to take a stand on the highly publicized incidents surrounding the shootout. As with any other study, there were limitations with this analysis. By focusing on one social media platform, the findings cannot be generalized to other social media platforms. Worth noting is YouTube was chosen for its reputation as a medium for leading the way in online news. This study looked at a relatively small timeframe of tweets, as it was mainly concerned with the crisis immediately following the event.

Future studies could utilize a longitudinal approach, and determine if online public opinion changes greatly over time. Also of interest would be survey or focus group approaches that examine the uses and gratifications of users. We did not interview the individuals who posted the content we analyzed; therefore, we did not get a sense of the uses and gratifications of the users of social media platforms under analysis. We also experienced limitations in our computational methods. First, computational techniques rely on certain assumptions about the data to work. For many of them, there is a lack of comparison of data with real-life applications, as gathering data and the right human expertise to judge the results can be expensive. Furthermore, they enable a larger number of analyses to be performed and allow data to be looked at various ways. On the other hand, these methods are not perfect. One limitation is the challenge of using the LDA to determine the number of themes. Having too few themes means that various themes are grouped together and having too many may lead to some themes being fragmented. In our study, we ran LDA, ranging from six to 10 themes, to determine the best number of themes.

Secondly, LDA does not distinguish between the various meanings of a word, treating them all the same. LDA takes single words as a unit of study, where potential phrases that have specific meaning are broken up, and they can provide other insights. Finally, in this study, we try to remove duplicate tweets. However, there are still some “near-duplicates” tweets that differ by one to two words, or maybe a different hashtag. We will explore some more advanced near duplicate removal techniques in the future to find out if they affect the results.

Even with these limitations, study findings are significant as they add to the literature on social media and citizen frames. Findings are important as perceptions and stereotypes of groups often become the dominant viewpoint whether they are accurate or not. Study findings also illustrate the impact the #BlackLivesMatter movement has had on society. Citizens used the same narratives that are used daily to characterize Black people killed by White police officers. Scholars must continue to explore social media and the dynamics of marginalized groups. Such analyses may provide valuable insight into the changing fabric of popular culture and the evolution of social media platforms.

References

- Ampofo, L., Anstead, N. & O'Loughlin, B. (2011). Trust, confidence, and credibility: Citizen responses on twitter to opinion polls during the 2010 UK general election. *Information, Communication & Society* 14 (6), 850-871
- AP (2015). Secrecy surrounds Waco biker shootout investigation. Retrieved February 28, 2016, from <http://www.cbsnews.com/news/secrecy-surrounds-waco-biker-shootout-investigation/>
- Biel, D. (2013) Theme modeling and digital humanities. *Journal of Digital Humanities*, 2(1), 2013.
- Blei, D., Ng, A., & Jordan, M. (2003). Latent Dirichlet allocation. *Journal of Machine Learning Research*, 3:993–1022, January 2003.
- Blow, C. M. (2015, June 17). The Delusions of Rachel Dolezal. *The New York Times*. Retrieved from <http://www.nytimes.com/2015/06/18/opinion/charles-blow-the-delusions-of-dolezal.html>
- Boettcher III, W. A. (2004). The Prospects for Prospect Theory: An Empirical Evaluation of International Relations Applications of Framing and Loss Aversion. *Political Psychology*, 25(3), 331-362.
- Broersma, M., & Graham, T. (2013). Twitter as a news source. *Journalism Practice*, 7(4), 446-464. doi:10.1080/17512786.2013.802481.
- Bruinius, H. (2015). LockerDome - Personalize the web. Retrieved February 22, 2016, from <https://lockerdome.com/lad/8295909352044135>
- Choi, S. & Park, H.W. (2014). An exploratory approach to a Twitter-based community centered on a political goal in South Korea: Who organized it, what they shared, and how they acted. *new media & society*, 16(1), pp. 129-148.
- CNN Obtains Video of Twin Peaks Shootout – KWTX-TV News. (2015, October 29). Retrieved December 14, 2015, from <http://www.kwtx.com/home/headlines/CNN-Obtains-Video-Of-Twin-Peaks-Shootout-338366832.html>
- Condelli, L., & Wrigley, H. (March 25-27, 2004). Real world research: Combining qualitative and quantitative research for adult ESL. In *Proceedings of the National Research and Development Centre (NRCD) second international conference for adult literacy and numeracy*, Loughborough, England, pp. 1-34.
- Dates, J. L. & Pease, E. C. (1994). *Warping the World: Media's Mangled Images of Race*. The Freedom Forum Media Studies. Columbia University, New York, 8 (3) 81-88.
- Duggan, M. (2015, August 19). The Demographics of Social Media Users. Retrieved from <http://www.pewinternet.org/2015/08/19/the-demographics-of-social-media-users/>
- Enriques, E. (2001). An overview of various feminist strategies for reconstructing knowledge by Elizabeth L. Enriques 1998-2001 Isis International-Manila.
- Entman, R. (1993). Framing: Toward Clarification of a Fractured Paradigm. *Journal of Communication*, 43(4), 51-58.
- Ford, D. (2015). Bandidos vs. Cossacks: Was biker shootout over territory? Retrieved February 24, 2016, from <http://www.cnn.com/2015/05/18/us/biker-brawl-bandidos-cossacks/index.html>
- Gamson, W. A., & Lasch, K. E. (1983). *The Political Culture of Social Welfare Policy*. Evaluating the welfare state: Social and Political perspectives, 397-415.
- Gans, H. J. (1979). *Deciding What's News*. New York: Vintage Books.
- George-Palilonis, J. (2012). *The multimedia journalist: Storytelling for today's media landscape*. Oxford: Oxford University Press.
- Goonetilleke, O., Sellis, T., Zhang, X., Sathe, S.: (2014). Twitter analytics: a big data management perspective. *SIGKDD Explor. Newsl.* 16(1), 11–20.
- Hall, S. (1980). Encoding/decoding. In S. Hall (Ed.), *Culture, Media, Language: Working Papers in Cultural Studies*, 1972-79 (pp. 128-38). London: Hutchinson.
- Holland, J. (2015). Differing perceptions of Waco, Baltimore bothering some. Retrieved February 22, 2016, from <http://news.yahoo.com/see-difference-between-perceptions-waco-baltimore-071956990.html>
- Hollandsworth, S. (2015, July). *Gang Land – Texas Monthly*. Retrieved November 3, 2015, from <http://www.texasmonthly.com/the-culture/gang-land/>

- Hong, L. & Davison, B. 2010. Empirical study of topic modeling in Twitter. In Proceedings of the First Workshop on Social Media Analytics (SOMA '10). ACM, New York, NY, USA, 80-88
- Kohn, S. (2015). Waco coverage shows double standard on race - CNN.com. Retrieved November 29, 2015, from <http://www.cnn.com/2015/05/18/opinions/kohn-biker-shooting-waco/index.html>
- Kontos, L., Brotherton, D., & NetLibrary, I. (2008). Encyclopedia of gangs, 181-187. Westport, Conn: Greenwood Press.
- Kutner, J. (2015, May 18). Reporting on Waco biker gang killings reveals disparities in news coverage - Salon. Retrieved November 3, 2015, from http://www.salon.com/2015/05/18/coverage_of_waco_biker_gang_killings_reveals_disparities_in_news_coverage/
- Meraz, S., & Papacharissi, Z. (2013). Networked Gatekeeping and Networked Framing on #Egypt. The
- Nielsen, R. K., & Schrøder, K.C. (2014). The Relative Importance of Social Media for Accessing, Finding, and Engaging with News. *Digital Journalism*, 1-18.
- Nielsen, R. K., & Vaccari, C. (2013). Do People "Like" Politicians on Facebook? Not Really. Large-Scale Direct Candidate-to-Voter Online Communication as an Outlier Phenomenon. *International Journal of Communication*, 7, 24.
- O'Neill, A., Lavandera, E., & Morris, J. (2015, October 31). Knives, guns, blood and fear: Inside the Texas biker shootout - CNN.com. Retrieved November 3, 2015, from <http://www.cnn.com/2015/10/29/us/texas-biker-shootout-new-details/>
- Ono, K. (2009). What Is This "Post-" in Postracial, Postfeminist... (Fill in the Blank)? *Journal of Communication Inquiry*, 210-253.
- Perrin, A., & Duggan, M. (2015, June 26). Americans' Internet Access:
2000-2015. Retrieved from <http://www.pewinternet.org/2015/06/26/americans-internet-access-2000-2015/>
- Ross, P. (2015, May 20). Waco Biker Shootout: The Origin of U.S. Biker Gangs and Their Rise into Organized Crime. Retrieved February 22, 2016, from <http://www.ibtimes.com/waco-biker-shootout-origin-us-biker-gangs-their-rise-organized-crime-1931741>
- Schiller, D. (2015). Life and death in Waco: A biker's story. Retrieved February 24, 2016, from <http://www.houstonchronicle.com/news/houston-texas/houston/article/Life-and-death-in-Waco-A-biker-story-6339392.php>
- Stranahan, L. (2015, December 13). Coverage of New Video in Waco Biker Shooting Reveals Media Bias. *Breitbart News*. Retrieved December 14, 2015, from <http://www.breitbart.com/big-government/2015/12/13/coverage-new-video-waco-biker-shooting-shows-media-bias/>
- Tsiaperas, N. M. and T. (2015, May 20). Two bikers who didn't attend Waco summit say violence wasn't planned. Retrieved February 22, 2016, from <http://www.dallasnews.com/news/state/headlines/20150519-2-bikers-who-didnt-attend-waco-summit-say-violence-wasnt-planned.ece>
- Waiske, B. (2013). Framing News in 140 Characters: How Social Media Editors Frame the News and Interact with Audiences via Twitter. *Global Media Journal -- Canadian Edition*, Volume 6, Issue 1, pp. 5-23
- Watkins, S. (2001). Framing protest: News media frames of the Million Man March. *Critical Studies in Media Communication*. 18(1), 83-101.
- Williams, S. (2015, July 6). The Power of Black Twitter. Retrieved January 4, 2016, from <http://www.thedailybeast.com/articles/2015/07/06/the-power-of-black-twitter.html>
- Yang, X., Ghoting, A., Ruan, Y., & Parthasarathy, S. (2012). A framework for summarizing and analyzing twitter feeds. In Proceedings of the 18th ACM SIGKDD international conference on Knowledge discovery and data mining (KDD '12). ACM, New York, NY, USA, 370-378.
- Yin, J. & Wang, J. (2014). A dirichlet multinomial mixture model-based approach for short text clustering. In Proceedings of the 20th ACM SIGKDD international conference on Knowledge discovery and data mining (KDD '14). ACM, New York, NY, USA, 233-242.
- Zangerle, E., Schmidhammer, G. and Günther, S. (2015). #Wikipedia on Twitter: analyzing tweets about Wikipedia. In Proceedings of the 11th International Symposium on Open Collaboration (OpenSym '15).