

Anatomy of a Protest: Activism, Social Media and Urban Space

Alireza Karduni

Abstract

The black lives matters movement has risen in response to social injustice in the African American community in the United States, specifically concerned with police shootings and brutality. Similar to many modern movements in the age of information, there has been many protests around the United States that utilize mobile technologies and social media to diffuse information, organize, and occupy public space to demand justice and equality. In this research we study one recent protest that happened in the United States; the protests in the aftermath of the shooting of Keith Lamont Scott at Charlotte. We will study the events in three different layers: social media, physical social network, and public space. To understand the relationship between these three layers, we conducted focus group studies with protesters and activists. We then used social network analysis and natural language processing to understand the dynamics of this event through data collected from Twitter. We will finally compare our knowledge created from the focus groups and the results of our data analysis while focusing on the usage of public space. We will finally discuss the different groups of actors, different types of public space, and the diverse and important usages of social media in these processes.

Introduction

“The freedom to make and remake ourselves and our cities is, I want to argue, one of the most precious yet most neglected of our human rights” David Harvey, *The right to the city*.

For the first time in history, since 2013 the majority of the world’s population lives in cities. They are the place where people live, work, and innovate; but they are also the places where people face grave injustices and unfairness. The American city has consistently been a place where many of the racial dynamics and injustice come to light. The 1960s and civil rights movement focused on the public domain in an effort to narrow the racial divide. However, residential segregation has consistently remained a major feature of many American cities [1].

Segregation in American cities is not only a geographic phenomenon: racially influenced factors such as access to public transportation, isolated living situations, and lack of daily social contacts lead to reports of 739 people dying in Chicago. The age normalized death rates of African American to whites were 1.5 to 1 [2]. These inherent and unjust racial biases are evident in many other aspects of cities and societies of America. African American neighborhoods are prone to food disparities[3], higher disability rates[4], and unfair education system[5].

Most recently, after George Zimmerman the killer of Trayvon Martin, was acquitted for his crime, the problem of police bias and brutality led to the creation of the Black Lives Matters movement[6]. The Black Lives Matters has spurred demonstrations against the racial segregation and injustice in the United States. Black lives matters is expressed through social media and the hashtag #BlackLivesMatter and urban protests in many cities in response to deaths of unarmed African-Americans by the police force [7]. These protests are the epitome of the demand of African Americans to receive equal treatment by the police, as part of a larger demand for reducing and eliminating the inherent institutional racism existent within the American city.

One of the important features of the Black Lives Matters movement, as highlighted by the hashtag before the name is the integral role played by social media. This is similar to many urban protests and revolutions around the world such as the Arab Spring in Egypt and Tunisia ,the Green movement in Iran, [Put the Spain protests][8, 9]. Black Lives Matter supporters not only use social media as a means to show individual support, it is also used to organize protests, to connect with other supporters, communicate and argue their goals and demands, and transmit their agenda and peaceful message [10].

The aim of this research is to study the Black Lives Matters movement and understand how protesters use social media, urban space, and their social connections to express their frustrations and take effective collective action. In order to do so, we will adopt the theoretical framework of Manuel Castell's network society. We will use it to define our general research

questions as well as to create a mixed methods research strategy to effectively answer those research questions.

In the next section, we will overview the existing literature regarding the relationships between protests, urban space, and social media. We will then briefly describe the theoretical framework of social movements in the network society as defined by Manuel Castells. Next, we will describe our case studies, data sources, and methods which we will use to conduct our research. We will then continue by discussing the results of our analyses and their implications. Finally we will conclude by offering some remarks on how the results of our research can be used to by researchers to better understand the Black Lives Matters movement as well as by the protesters and supporters to better organize future demonstrations.

Social Justice, Urban Space, Social Media

From the beginning of the 21st century, new terms have surfaced to describe a new form of activism. “Horizontalism” was coined by Juris and was used to describe how digital media has shifted the form of social movements to “leaderless” and “horizontal” movements (Juris 2005). Hardt and Negri use “swarms” as an analogy for describing how the new forms of communication creates a form of intelligence for social movements that is more than the agents in those movements(Hardt and Negri 2005) .Others have criticized the idea of horizontal movements by emphasizing that it is in fact the “collective identity” created through the rapid sharing of ideas and symbols is the main reason behind the integral role of social media in protests (Gerbaudo 2014).

Furthermore, the nature of social media and its effects on social movements are heavily debated. Gerbaudo argues that even though social media such as Facebook and Twitter has in fact played an important role in mobilizing protesters. However, news agencies such as Aljazeera made a greater impact on the events of the Egyptian revolution (Alterman 2011). In contrast, Earl and colleagues conduct research on a corpus of tweet related to the protest surrounding the G20 meeting in in Pittsburgh in september 2009. They test a series of hypothesis regarding the usage of Twitter for sharing of protest location as well as police action

and conclude that Twitter has played an integral role as the primary form of organization in these protests (Earl et al. 2013).

the amount of literature studying the relationship between social media and social movements illustrates the importance of this new type of media in the context of protests and social movements. However, there hasn't been as much focus on the relationship of public space to these new forms of media and social movements. Hardt and Negri argue that in the current globalizing world, place is not of primary importance. "the multitude" which they define as a new form of social class, which is created in the globalizing world and by the new forms of network communication, that is irreducible to its individual agents does not have a place (Negri and Hardt 2000). Gerbaudo, however, criticizes the idea and argues that place which is occupied by activists highlights a form of unity and togetherness that is inseparable from the process of mobilization (Gerbaudo 2012).

In this research we aim to study the relationship between social media, urban space, and social networks in the context of activism without giving primacy to any of these layers. To do so we will adopt the theoretical framework developed by Manuel Castells in his book "Networks of Outrage and Hope" which is an analysis of protests from the lens of network societies and how they shaped by networks of physical space as well as networks of communication in the virtual space. In the next section we will briefly overview the framework developed by Castells and build the foundations for our study of the BlackLivesMatters protests.

Urban Protests in the Network Society

This thesis lies at the intersection of social media, urban space, and people. Our goal is to use the wealth of information that is created by usage of social media to understand how it can be used as an instrument of social change. The focus on the Black Lives Matters protesters and supporters will lead to an understanding the relationships of protests and urban space.

Our framework to study these protests is through the lens of a "network society" as defined by Manuel Castells. Network societies are new forms of social structures influenced by globalization and the information and the communication revolution. Castells describes network society as *"a society whose social structure is made up of networks powered by*

micro-electronics-based information and communications technologies" [11]. In network societies, the main sources of power are communication and information because "... *the fundamental battle being fought in society is the battle over the minds of the people*" [12].

In these societies, power is expressed through the ability to create and control networks of communication (Castells calls this network programming power) as well as the ability to connect with other strategic networks (Castells calls this network switching power) [13]. To demonstrate this, Castells gives an example of a world-class research university such as MIT that exercises a great power to control disciplinary discourses and exclude the ideas of those outside their network. This power is established through a mutual relationship between the institution and the United States Military through which the military ensures funding and the university ensures the technological advancements. [14]

Castells asserts that these powers are exercised for the dominant and privileged social positions. At the same time, a form of counter-power network comes into existence to represent the values and demands of groups that are excluded or are under-represented in the network society. These resistance and counter power networks use the same main two methods, namely programming and switching. Castells mentions three specific methods of influencing power networks.

Social movements, individually and collectively, aim to introduce new programming into the power networks. For example, for the case of global financial networks, new programming means that under conditions of extreme poverty for some countries, debt should be pardoned. [13]

They also use a mechanism that consists of "blocking the switches of connection between networks that allow the networks to be controlled by the meta-program of values that express structural domination". For instance, this could be accomplished by filing lawsuits to change the rules of connections between a government and the media businesses.[13]

Finally, the resistance could take shape through a "radical disruption of the switchers that affects material infrastructure of the network society". [13] An example of this would be an act

blocking the transportation facilities of a city in order to make demand for a mayor to step down.

In this research we observe protests in the network society as acts of counter power that utilize these mechanisms to make demands:

Individuals use social media to form virtual networks with other supporters of their cause. They use them to quickly and efficiently spread video and images of police brutality that start a protest, and they also use them to repel the forces against their ideas. The usage of social media, however, does not stop here. The internet is used to call supporters to action in the street, highways, and squares [15]. A very clear example of this type of connection between virtual space and public space was the Tunisian rebellion. In his book, *Networks of Outrage and Hope*, Manuel Castells calls this phenomenon “a hybrid public space of freedom”: “The connection between free communication on Facebook, YouTube, and Twitter and the occupation of urban space created a hybrid public space of freedom that became a major feature of the Tunisian rebellion, foreshadowing the movements to come in other countries”.

He then continues to define the counter power processes of protests from the lens of networks and he uses Tunisia as an example. He describes social uprisings as an expression of protest against many issues such as dire economic, social and political conditions, and police brutality:

“...But from these objective conditions emerged emotions and feelings – feelings of outrage often induced by humiliation – and these feelings prompted spontaneous protests initiated by individuals: by young people using their networks; the networks where they live and express themselves. Certainly, this includes the internet’s social networks as well as mobile phone networks. But this also means their social networks: their friends, their families, and in some cases, their soccer clubs, most of them offline. It was in the connection between social networks on the internet and social networks in people’s lives where the protests were forged”

The movements are hybrid: a connection between social network in the virtual space and social network in society. The protest is manifested in the symbolic public space: “social movements need to carve out a new public space that is not limited to the internet, but makes itself visible in the places of social life. This is why they occupy urban space and symbolic buildings.

Occupied spaces have played a major role in the history of social change, as well as in contemporary practice...”

Based on the above narrative of social movements in the network society as defined by Castells, we will observe Black Lives Matters through these three layers:

- 1- **Social Media**, mobile social network, the internet: where the information is shared communication is rapidly made, thoughts are shared, and protests are planned. This will help us to understand how information technology is used to influence the networks of power.
- 2- Human societies and **social networks**: the network of people, friends, and families; the physical connections of people. How people connect with each other and distribute ideas and concerns. This will allow us to understand the networks of protesters as well as the switches and networks they aim to influence and change.
- 3- **Urban Space**: the areas where the overlap of both social networks (virtual and physical) comes to light. The symbolic urban space where communities form, demands are made, and rules are changed. This will help us to understand how public space influences success of protests.

We will start our analysis by studying protesters and their real-world social networks. We will interview protesters to understand whether and how they use the mechanisms of counter power in the network society to reach their goals. We will ask them about their demands, how they organize using social media, the types of spaces they occupy, and the reasons some incidents mobilize them to protests more than others. Our findings from our interviews with protesters will help us further shape the questions of this research and study the other two layers of the protests.

We will study social media through a data analytical approach. We will mine tweets related to the black lives matter movement using natural language processing methods as well as spatial analysis techniques to create a summary of their demands. We will also use location, text, and time data from Twitter to find how the Black Lives Matters supporters organize themselves spatially and what places they occupy.

Finally, we will compare the findings from the other two layers on urban space. By analyzing the findings from social media analysis and social network analysis as they relate to specific elements of urban space such as connectivity of streets and population and business density, we will aim to search specific features of urban space that drive the protests locations.

In the next section, we will describe the methods for our two parallel approaches: A plan for our ethnographic studies with protesters. As well as the data analytical methods we will use to study data retrieved from social networks such as Twitter and Instagram as well as spatial data such as census, streets, and buildings data.

Methodology

Our research will be conducted through a case study of one Black Lives Matter protest in the city of Charlotte North Carolina. More specifically, the protests in the aftermath of the shooting of Keith Lamont Scott on September 20th 2016 [16]. Analyzing this protest through the three different layers will allow us to gain an in-depth understanding of the interactions between these layers.

Focus groups: learning the meaning behind activists actions

For our qualitative analysis of social networks of protesters we will adopt a focus group approach. Our focus groups will be primarily held in person in Charlotte and online in Chicago with Black Lives Matters activists who participated in the protests. Our interview will be semi structured, with some open ended questions and some structured questions. The focus groups will mainly consist of discussing the multiple days of protest in Charlotte while focusing on the “why” and “how” of activists’ actions. We will ask questions regarding the places the activists go to and the significance of each place. We will also inquire about the different types of social media they have used and the role each social media plays in their actions.

Our interviews will allow us to understand the nature of counter-power strategies made by protesters in both social media and urban space and how protesters influence the existing networks, programming new networks, disrupting and affecting the connections between networks, and how urban space affects and is affected by these actions. Using the results of these interviews we will collect data from Social Media using most used keywords by the users

and also by two sample datasets we obtained by using Black Lives Matters hashtag during the times of the protests.

Social Media Analysis: How a specific social media responds to a specific protest

Our analyses of social media data will consist of two main parts. First we will conduct natural language processing on the text of the tweets to extract meaningful information about locations of protest from the large collection of data.

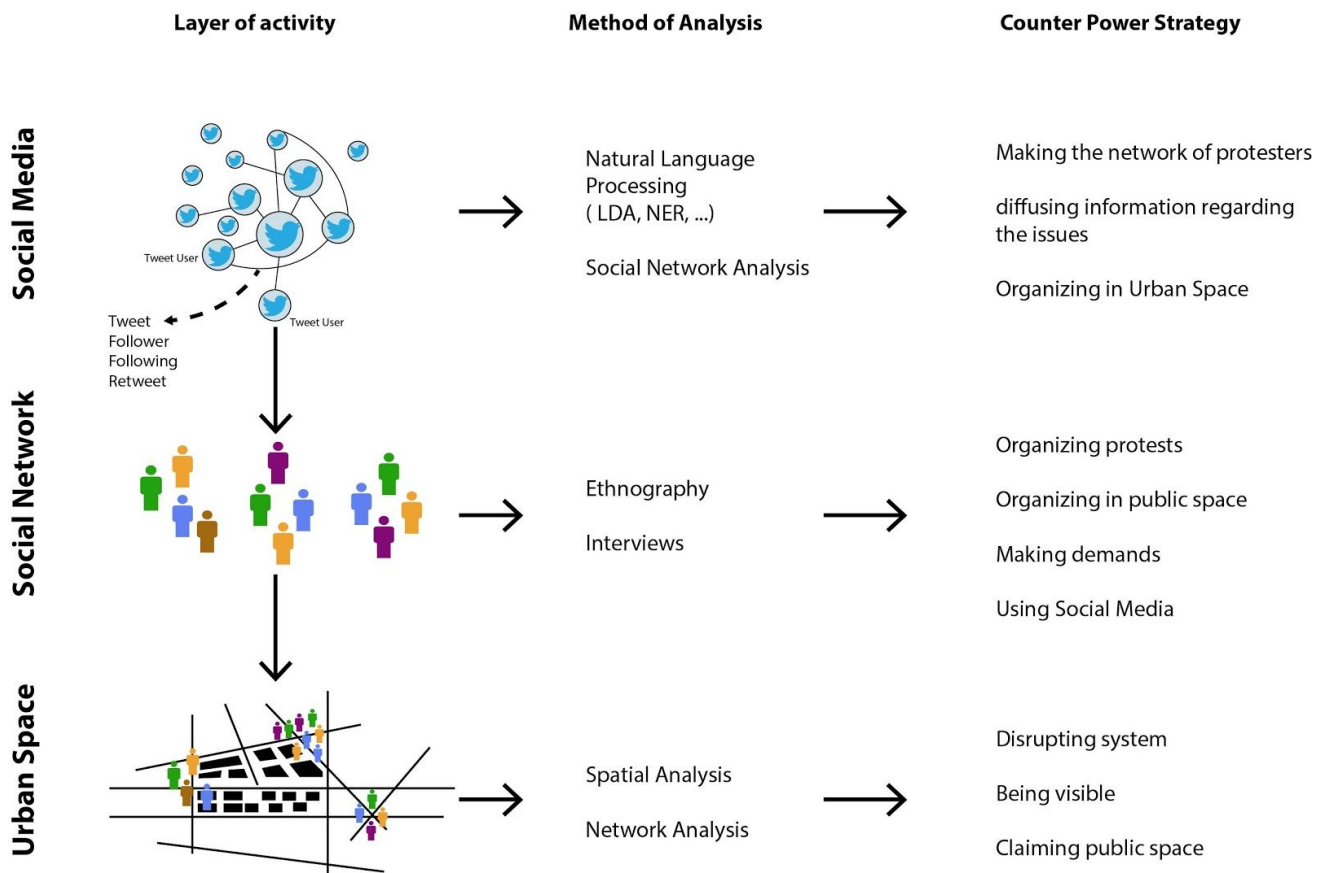


Figure 1: The mixed methods approach of this research to study urban protests

We will use Named Entity Recognition (NER) to extract location information from the tweets. NER is a method that tags words in a document as being about a Location, Date, Person, Organization, or other similar tags. The words tagged as location by this method, will be then converted to geographical information using geocoding (converting named places to latitude

and longitude). For example using NER to tag the sentence “My name is John Doe. I live in Charlotte, North Carolina. I work at Bank of America” we would get:

(John Doe: Person), (Charlotte North Carolina: Place) , (Bank of America: Organization)

This method will allow us to find which places in Charlotte are being mentioned most in the social media and then analyze in what ways these places are being mentioned.

Second, we will also use social network analysis using tweets and retweets of different users to understand the different actors and their role in the network. We will construct a network retweets of Twitter users. More specifically, in this network, Twitter users are nodes and edges between the nodes are if one retweet other. For example, if user A retweets user B. There will be a directed edge between B and A. If this retweet act happens multiple times between these users, the weight of the edge between them will increment. This method will result in a weighted directed social network which will allow us to study this protest through the lens of social networks. We will use different social network analysis methods and metrics to understand the features of this network and how different groups of people interact with each other in Twitter in the context of a protest.

The first method to analyze the social network is community detection. Community detection will allow us to understand whether different users shape different clusters and whether they behave differently in these clusters. We will use maximum modularity community detection for this analysis ([Blondel et al. 2008](#)).

In order to analyze the importance of nodes in the network, we will use the Pagerank ([Page et al. 1999](#)) and betweenness centrality ([Brandes 2001](#)) metrics. Pagerank was originally created by Larry Page of Google to measure the importance of Web pages in the world wide web based on their number of links and their proximity to other important nodes. The pagerank algorithm produces a probability distribution for each node representing the likelihood of a random surfer ending up on a specific node.

Betweenness centrality is a measure of connectedness between nodes. A node with high betweenness centrality is more more central in the graph in a sense that it lies between paths

between all nodes. The output for betweenness centrality is a fraction of all shortest paths between all nodes that go through a specific node.

The extracted information from tweets, as well as the time of posting, and the location of posting (if available), can then be compared with the results of the interviews from our two case studies. These analyses will respond to the network making (programming) counter-power strategies as defined by Castells, as well as a means to understand where the symbolic urban space is.

The final part of our analysis consists of merging the results of our social media data analysis and interviews through the context of urban space. We will first analyze the social network by observing the users who mention a lot of detail protest places in comparison to ones that do not. This serves as another measure of “importance” for nodes in our network. We will simply count the number of times nodes are mentioning specific places in their tweets and will study nodes with high place mentions in the context of their social network.

Figure 1 shows a summary of the mixed methods research approach adopted for this research.

In the next section, we will discuss the results of our focus group interviews that will serve as a guide for our data analysis.

Activists’ and Protesters’ Perspectives

In our attempt to gain a comprehensive understanding of the events during the protests in Charlotte in September 2016, we conducted a series of interview/focus groups that helped us greatly to understand the motifs and goals of activists and to move forward with our data analysis . For this study, we spoke with a total of 10 individuals who participated in the protests that occurred between September 20th and September 23rd in Charlotte. Our interviewees consisted of 3 individuals who did not identify with being an activist and 7 subjects who did consider themselves as activists. During the focus group/ Interview sessions, we asked our users to give us a narrative of their participation in the protest. We would then occasionally bring the focus on the whys and hows of going to certain spaces and usages of specific social media. The

discussions focus on the first two nights of the protests. In this section, we will describe a collective narrative and our findings for each night.

First night: Old Concord Rd. Where the shooting happened and the protests started

The first night of the protests was definitely an impromptu and unplanned one. All of our activist participant participated in the first night of the protest which happened in the vicinity of Old Concord Rd. and Harris Blvd in Charlotte, an area in close proximity of UNC-Charlotte's campus.

Our activist interviewees mentioned that they started hearing the news through their Facebook chat group. The organization of the protest happened mostly by friends texting each other about the incident and asking others to go to where the incident happened to protest the shooting. Based on the observations of our interviewees, the first protesters to show up were students and their friends who were physically close to the area. One of our interviewees who did not identify as being an activist, mentioned that he first heard people shouting and went to the location to observe. It was only after hearing about the details of the event from the other protester that he started to protest against the police.

When we asked our interviewees why they went to Old Concord, almost everyone mentioned that to give support to the family of the protesters and that it was the most natural place to go to protest as it was close to UNCC. When asked about why Old Concord was chosen, one of the activists summarized this point "The reality is that it [the protest] had to be big because that area is so separated and it would be easy for police to surround or block off people". Other protesters' mentioned that the fact that Old Concord Rd is not well-connected and it was very easy for the protesters to be contained, they took the protests to the interstate to make the message louder.

Regarding how the first night protest became big and how people were motivated to participate. Our interviewees mentioned that Facebook live, Periscope, and Instagram were all used to live stream the events. One of the interviewees said "everyone was live streaming, so when they got one of our phones, others would still show what was happening". The news coverage, along with texting friends and live videos helped the first night of the protest to

become loud and impactful. “By the end of the night, there were people protesting who came from Raleigh (the capital of north Carolina). A lot of them stayed with me that night”

Second night: Uptown Charlotte, a more organized continuation of the protests

The second night of the protests happened with more organization and planning. The location of the protest changed from the University Area to Uptown Charlotte. All of our interviewees told a similar story about the sequence of events. One interviewee who did not identify as being an activist said that she was contacted by one of her friends and was told about a gathering at a church in Uptown. The church was a place that some of the in person organization took place. One of our activist interviewees was also present in the church.

Most of our other interviewees started the second night’s protest in Marshall Park : “Marshall Park is one of the most central locations in the city, it's where all protests pretty much start at. It's also right by the jail, government center, etc”. Many of the protests are sanctioned in Marshall Park. Another interviewee said “It's easiest to find parking for free around Marshall park and it's easy to identify and use as a meeting place for people coming from different directions.”. Another interviewee had a different perspective about the park: “Even though it’s close to Uptown, it is still separate from most of the activities...”.

After Marshal Park protesters flowed into the center of uptown, namely the intersection of Trade and Tryon streets which one of the activists described as “literally the center of the city. “ Another interviewee described this interaction as : “I think that Trade and Tryon ended up being an important place because police tried to corner people into that area.” Epicentre is another location in the immediate vicinity of Trade and Tryon where many of the protests was pushed to. “Epicentre and the areas surrounding represents really what this city was made for right [wing], white people. It represents that these are the areas to disrupt.”

There were other places that were mentioned by some of the interviews but were not as prevalent. A Football stadium that is also very close to Trade and Tryon: “It was really difficult to disrupt people in front of Panther's games at the stadium because the stadium is technically "private" property so in order to avoid arrest we had to stay on "public" property which made it

more difficult to interrupt as we were separated from the stadium and the people whose attention we were trying to get.”

Social media played an important role in motivating people to participating in the protests. One of the protesters who did identify as being an activist said that he would not have participated if he did not see a live stream of the protest in Trade and Tryon. “When I saw the video on Facebook, I just had to go.... you could see exactly what was happening and that is powerful”.

Encrypted text messaging was also considered as an important tool for communication. Our activists focus groups mentioned that after the first night where there were lots of phones investigated by the police, they started using encrypted text messages for security purposes. Networks of friends was also very important factor in bringing more people in the protest as described by one of our interviewees: “if my roommate didn’t text me, I wouldn’t have gone because I had a long day and I was really tired”.

Every type of social media was used in the duration of the protest but for different purposes. Events in Facebook were used to organize people for future protests. Photo sharing apps such as snapchat and Instagram were used to share photos of protests as they happened. Chat applications were used to give support to other people and ensure their safety. Other social media such as Twitter were used to read and publish news about the protest in real time. Finally, live streaming the event played a crucial role in motivating people and contextualizing the protests for people who were not present at the protests.

In this section, we learned about many of the important places that shaped the protests and events of protests in Charlotte. We also acquired some understanding about the significance of each place, as well as how social media was used to achieve different results such as organizing, communicating, streaming, and discussing the events of a protest. In the next section, we will analyze a collection of tweets collected using related hashtags and keywords from the duration of the protests. The results of our interviews will act as guidelines to reduce the complexity of the unstructured nature of the dataset.

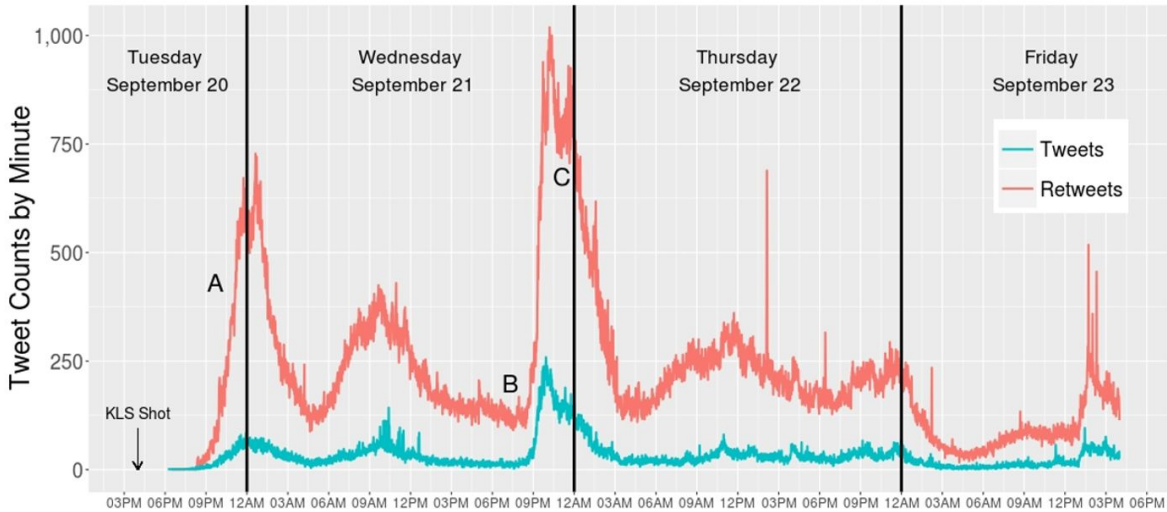
Tweets: When, Where and Social Network

In order to analyze the Charlotte Protest through the lens of social media. We received a dataset of Tweets that included keywords and hashtags such as #keithlamontscott, #charlotteprotest and #charlotteriot. The dataset consists of approximately 1.3 millions tweets between september 20 and 23rd. In this section we first briefly study the temporal and spatial nature of these tweets and then analyze the dataset as a social network.

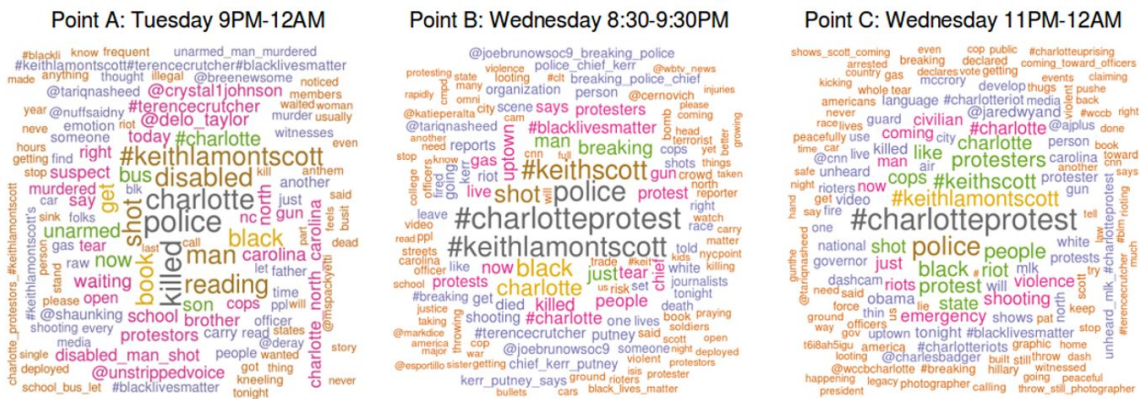
When

Tweets seem to respond to the time protests events fairly well. A group of researchers using the same dataset conducted analyzed the peaks of tweet count over time and matched important events which showed many of the major events in the protest. Figure (XX) shows the timeline of our tweet dataset and some of the major events as they correspond with the timeline. Point A shows shows the first protest in Old Concord Rd., Point B shows the shooting of Justin Carr in Uptown Charlotte, and point C is when Governor McCorry declared a state of emergency. ([Anon n.d.](#))

Charlotte Protest Tweets: 72 Hours after the shooting of Keith Lamont Scott



Twitter Message Content: Text Word Clouds for Key Events



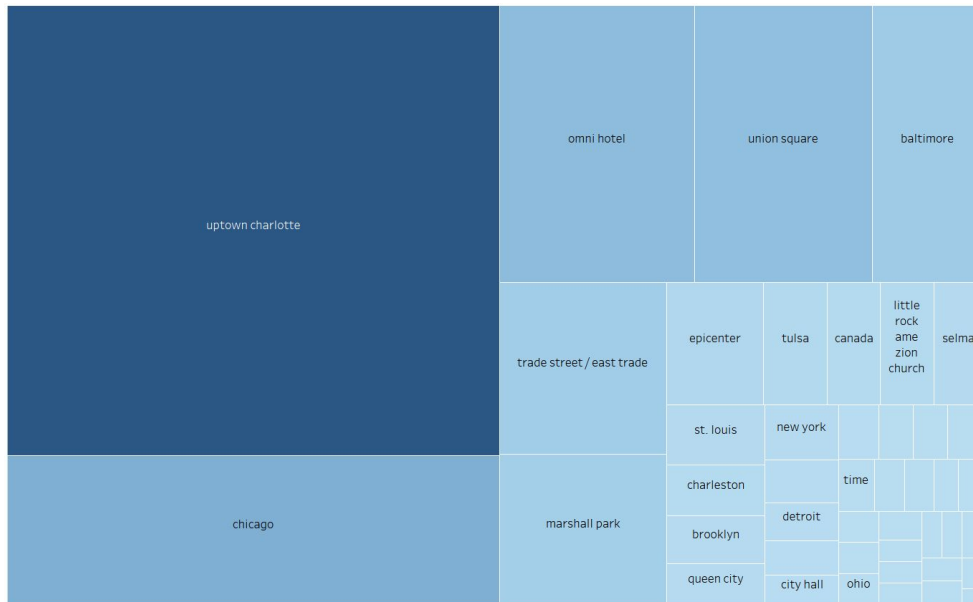
Source: Ryan Wesslen (UNCC DSI)

These results show that Tweets respond to the events of Charlotte protests fairly well. By analyzing these data as a social network, we aim to understand the relationship between people in social media, how they utilize Twitter as an instrument and how they respond to the events.

Where

A central theme in our research is the relationship between urban space, social media, and people. In order to start analyzing how place is reflected in social media we need to gather all geospatial information we can from the tweets. Unfortunately, the dataset is almost without

geolocated tweets (<200 tweets have geolocation information). To rectify this problem, we conducted Named Entity Recognition on the text of all of the tweets to find all of the mentions of places in the text. The results of this NER analysis were saved in a database for further analysis. Figure (XX) shows a visualization of the count of each place that is mentioned in the dataset.



As seen in Figure (XX) The highest number of place mentions found in our dataset was Uptown Charlotte which fits well with our focus group results. Marshall park, Trade street, and epicenter were also mentioned both in our interviews and in our NER results:

“Protesters rally at **Marshall Park** Wednesday in uptown #Charlotte”

“Lot of folks gathered at **Trade/Tryon** - @CMPD officers on bikes, backed up by National Guard @TWCNewsCLT #KeithScott”

“For those not from #Charlotte it's called **Uptown**, the rioting is going on around the **Epicenter** on the map....”

There were places in our NER which were not discussed greatly in our interviews. Omni hotel for example had a high number of mentions in our dataset. It turns out that on trade street in front of Omni Hotel Justin Carr was shot on Wednesday the 21st of September:

“#CharlotteProtest near **Omni**, where #JustinCarr was shot, is on the move.”

One of the other highly mentioned places was Little Rock Ame Zion Church which two of our interviewees also went to before the second night of the protest:

“I am at **Little Rock AMEZ church** and the juxtaposition of the peacefulness of the church and the sound of helicopters is jarr...”

Interestingly, there are mentions of places outside of Charlotte. Chicago and Union Square in New York were especially mentioned highly. By studying the tweets containing mentions of these places, we find that protests were held in support of the protests in Charlotte. Two example tweets mentioning these two places:

“NYC Today. Emergency Action for #KeithLamontScott. 7PM, **Union Square**. #KeithScott. #CharlotteProtest.”

“**Chicago** standing with the #CharlotteProtest tonight!”

These results show that tweets responds to specific places where protests occur. Important places mentioned in our interviews are also found with higher numbers in our tweets datasets. However, not all tweets contain mentions of tweets. In fact the majority of dataset contains of tweets discussing the shooting or details of the event such as the video of the shooting which the family of the victim demanded to be released. We are interested in understanding how these places are mentioned and to what extent. To do so, we will combine the results of our NER analysis with social network analysis to understand how different groups of people use geographic information in social media.

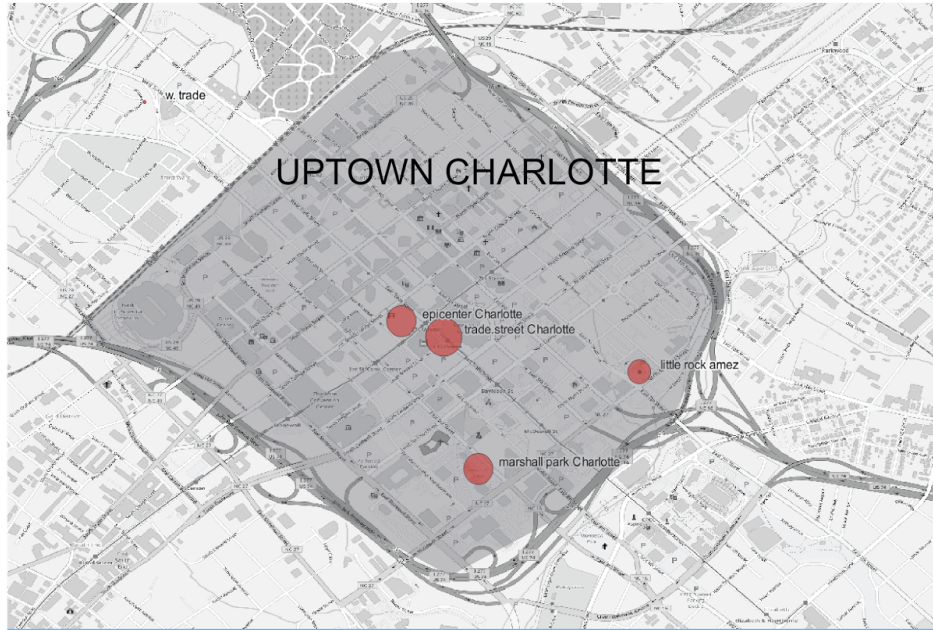


Figure XX: Map of place mentions in Charlotte protests Twitter dataset. Size of circle corresponds to the count of each place.

In the next section we will study our tweet dataset as a social network.

Charlotte protest as a social network

We constructed a social network of the Charlotte protest by considering each Twitter user as a node in the network and the existence of a mention or a retweet between them as an edge. This resulted in a directed graph with 341066 nodes and 899237 edges. The weight of edges in this network are the count of retweets between these two nodes. Each node also has the number of times they mention any of detailed places in Charlotte such as Marshall park, Epicenter, Trade and Tryon, and Omni hotel in the text of their tweets (we call this the placeMention of each node).



We first started by conducting community detection on the whole network. As seen in figure (XXX) The results show two main clusters that are highly connected within the cluster and less connected to the other. Our community detection produced other clusters which were too small to visible. We then calculated the pagerank and betweenness centrality of each node in the network. we can think of Pagerank as a metric for the importance of each node and betweenness as a measure of how “in between” each node is to all other nodes regardless of cluster.

We used the results from these algorithms to explore the content of tweets and get an understanding of the different groups of users and the different ways twitter content was used in the Charlotte protest. To do so, we sorted the nodes based on their pagerank, betweenness, and palceMention as well as based on the two main communities of tweet users. We then manually read the tweets by the top 20 users in each group and studied their Twitter page (if it existed) and tagged them based on whether they were charlotte local or not, whether they were pro ,neutral, or against blacklivesmatter protests, we noted their occupation if we could find, and noted whether they they are the Twitter handle for a person, and organization, or a news agency.

Table 1: Top Pagerank nodes in Charlotte protest network

id	placements	degree	Community	pageranks	Local	Position	Notes	Type
159764	9	1953	52	0.015189	Yes	Neutral	News Reporter	Person
341063	0	4241	52	0.015010	No	Pro	political analyst Reporter	Person
334131	1	7170	52	0.011286	No	Pro	Activist	Person
155828	2	5083	52	0.006851	No	Pro	Political analyst and activist	Person
142117	1	4161	0	0.006485	No	Against	Media Analyst, Youtuber	Person
78783	31	2193	52	0.005200	Yes	Neutral	None	News Agency
49814	0	24277	0	0.005166	Unknown	Against	can't find account	?
286112	0	12470	52	0.005058	Yes	?	Charlotte police department	Institution/organization
239813	0	2289	0	0.004543	No	Against	News Agency	News Agency
327629	0	736	0	0.004412	No	Against	None	Institution/organization
334280	0	7279	52	0.004109	Yes	Pro	Journalist	Person
134055	15	1920	52	0.004095	Yes	Pro	Reporter	Person
336391	0	987	52	0.004080	Yes	Neutral	Reporter	Person
151486	0	3952	52	0.003871	No	Pro	Reporter	Person
199473	0	46	52	0.003827	No	Pro	Journalist	Person
155816	2	421	52	0.003814	Yes	Neutral	Digital Reporter	Person
274031	0	2473	0	0.003775	No	Against	Podcast Host	Person
21218	1	12239	0	0.003667	No	Against	Youtuber	Person
153098	12	3136	52	0.003633	Yes	Neutral	None	News Agency
321568	0	1404	0	0.003598	No	Against	Journalist	Person

Studying the top 20 nodes in the network immediately highlights important points about the nature of the Charlotte protest Twitter data as a social network. First we can see that in the top 20 most influential nodes in the network, there are some users that are not local to Charlotte. This point highlights the scale of the impact these events had in the United States. Furthermore, we can see that there are users who are against the protests and criticize the actions and there are users who are supportive of the protests. Moreover, we can observe that users who are against the protests are from the “0” community (colored purple in the tables and in the graph visualization) and the people who are neutral and pro the protests are almost uniformly from the “52” community (colored green in the tables and in the graph visualization). These results clearly show the bipolar nature of how society reacts to the Black Lives Matters protests.

Table 2: Comparison of two major communities in the Charlotte protests network

Community 0 : Mostly against Black Lives Matter

id	placements	degree	Community	pageranks	Local	Position	Notes	Type
142117	1	4161	0	0.006485	No	Against	Media Analyst, Youtuber	Person
49814	0	24277	0	0.005166	Unknown	Against	can't find account	?
239813	0	2289	0	0.004543	No	Against	News Agency	News Agency
327629	0	736	0	0.004412	No	Against	None	Institution/organization
274031	0	2473	0	0.003775	No	Against	Podcast Host	Person
21218	1	12239	0	0.003667	No	Against	Youtuber	Person
321568	0	1404	0	0.003598	No	Against	Journalist	Person
141731	0	2142	0	0.003381	Unknown	Against	Suspended account	?
125980	0	4073	0	0.003296	No	Against	documentary filmmaker	person
245463	1	1462	0	0.002838	No	Against	Twitter News	Institution/organization
209889	0	3942	0	0.002783	No	Pro	presidential nomine and secret	Person
334553	0	927	0	0.002531	No	Neutral	Christian Conservative	Person
128052	0	2896	0	0.002486	No	Against	Twitter personality	Person
332142	0	1025	0	0.002230	No	Against	Twitter Personality	Person
156594	0	1224	0	0.002173	No	Against		Institution/organization
150156	0	2476	0	0.002130	No	Against	Twitter personality	Person
246906	1	1536	0	0.001975	No	Against	Twitter personality	Person
78340	0	7425	0	0.001883	No	Neutral	Reporter	person
165716	2	286	0	0.001856	No	Against	Twitter personality	Person
63912	0	1535	0	0.001762	No	Against	can't find account	
44539	0	6195	0	0.001716	No	Against	None	Institution/organization

Community 52 : Mostly pro or neutral to Black Lives Matter

id	placements	degree	Community	pageranks	Local	Position	Notes	Type
159764	9	1953	52	0.015189	Yes	Neutral	News Reporter	Person
341063	0	4241	52	0.015010	No	Pro	political analyst Reporter	Person
334131	1	7170	52	0.011286	No	Pro	Activist	Person
155828	2	5083	52	0.006851	No	Pro	Political analyst and activist	Person
78783	31	2193	52	0.005200	Yes	Neutral	None	News Agency
286112	0	12470	52	0.005058	Yes	?	Charlotte police department	Institution/organization
334280	0	7279	52	0.004109	Yes	Pro	Journalist	Person
134055	15	1920	52	0.004095	Yes	Pro	Reporter	Person
336391	0	987	52	0.004080	Yes	Neutral	Reporter	Person
151486	0	3952	52	0.003871	No	Pro	Reporter	Person
199473	0	46	52	0.003827	No	Pro	Journalist	Person
155816	2	421	52	0.003814	Yes	Neutral	Digital Reporter	Person
153098	12	3136	52	0.003633	Yes	Neutral	None	News Agency
336094	1	251	52	0.003466	Unknown	Pro	Twitter personality	Person
170847	0	6526	52	0.003376	No	Pro	Activist	Person
149381	1	6033	52	0.003297	Unknown	Pro	News for the new America	News Agency
340928	2	190	52	0.003250	Unknown	Pro	Activist, twitter personality	person
164509	3	35	52	0.002968	Yes	Neutral	News Anchor	Person
78036	0	1091	52	0.002769	No	Pro	Activist	person
165367	1	1350	52	0.002728	No	Pro	Activist Protestor	Person

Another interesting point visible in the top influential nodes in the protests social network, is the fact that none of the top influential nodes in Community 0 are local to Charlotte and there is an even distribution of local and non-local users in Community 52. This shows that supporters or critics of these protests are more likely to retweet each other and belong to the same community. We can also observe that there is very minimal mention of detail Charlotte places in the group against the protest, and we see more mention of places in the pro Black Lives Matter group.

To go more in depth to the role place plays we will now study the nodes with highest mentions of Charlotte detailed places. With an exception of one user, all of the users with highest

mention of specific Charlotte places are either pro or neutral to the protests and they are in fact from Community 52. By reading the tweets from that specific users, we found out that the users was not local, and in fact from the United Kingdom, all of the 29 mentions were retweets of one tweet that had the word “Marshall Park” in it. Furthermore, we can observe that 12 out of the top 20 users with high placeMentions are local to Charlotte. In fact, out of the top 100 users with placeMention (lowest count of 5 placeMentions), 85 node belong to Community 52 which are more likely to be supporters or neutral of Black Lives Matters.

Table 3: top users who mention specific Charlotte places

id	placementions	degree	Community	pageranks	Local	Position	Notes	Type
303903	56	3099	52	0.001482	Yes	Neutral	None	News Agency
78783	31	2193	52	0.005200	Yes	Neutral	None	News Agency
123051	30	912	52	0.000464	Yes	Neutral	None	Person
25731	29	13	0	0.000000	No	Against	self employed	Person
190314	23	422	52	0.000198	Yes	Neutral	Blogger	Person
284497	23	183	52	0.000079	Yes	Neutral	None	News Agency
307904	21	220	52	0.000251	Yes	Pro	Journalist	Person
53720	20	639	52	0.000940	Don't know	Pro	Black lives matter activist	Person
49516	19	249	52	0.000190	Don't know	Pro	Activist	person
226442	19	39	52	0.000124	Yes	Pro	artist, author, music	person
86847	18	140	52	0.000054	No	Pro	Musician	Person
224676	17	325	52	0.000685	Don't know	Pro		person
111033	17	36	52	0.000069	Yes	Pro	Activist organizer	person
117766	17	65	52	0.000065	yes	Neutral	None	News Agency
283555	17	195	52	0.000058	No	Neutral	News anchor	Person
134055	15	1920	52	0.004095	Yes	Pro	Reporter	Person
245421	15	47	52	0.000301	Yes	Pro	Activist	person
150045	15	110	52	0.000222	No	Pro	Activist	Person
117069	14	51	52	0.000071	Don't know	Pro	Don't know	person
125709	13	1020	52	0.000975	No	Pro	Activist	Person

Table 4: top “in between” users in the Charlotte protests

id	placementions	degree	Community	betweennesscentrality	Local	Position	Notes	Type
286112	0	12470	52	2542987.2	Yes	?	Charlotte police department	Institution/organization
105583	0	9076	0	1319096.0	No	Neutral	None	News Agency
282755	0	5924	0	1159881.2	Yes	Neutral	None	News Agency
209889	0	3942	0	994856.6	No	Pro	presidential nominie and secretary of	Person
21218	1	12239	0	765647.0	No	Against	Youtuber	Person
38823	0	20021	52	688080.1	No	Pro	Video journalist	person
125980	0	4073	0	667664.1	No	Against	documentary filmmaker	person
142117	1	4161	0	664128.0	No	Against	Media Analyst, Youtuber	Person
49814	0	24277	0	649739.3	Unknown	Against	can't find account	?
106183	1	10100	0	557121.0	Don't know	Against	Political Twitter account	Institution/organization
199389	8	3763	0	555745.1	Yes	Neutral	Talks about detail events of protests	News Agency
136842	0	2293	52	542722.1	Yes	Neutral	Governer	Person
209844	0	4070	52	485098.3	No	Pro	Activist revolutionary socialist	Person
151590	0	7214	0	478061.0	No	Neutral	News anchor	person
303903	56	3099	52	457590.4	Yes	Neutral	None	News Agency
44539	0	6195	0	446940.0	No	Against	Political Twitter account	Institution/organization
250923	0	2202	0	437951.5	No	Against	Presidential nominie	Person
199481	0	7068	0	409840.1	No	Neutral	Political anchor	Person
144400	0	2651	52	408203.3	No	Neutral	News agency	News Agency
153098	12	3136	52	406530.2	Yes	Neutral	None	News Agency

By studying the nodes with highest betweenness centrality we can study the users that are in between both communities. The user with the highest betweenness centrality is the Twitter

handle for the Charlotte Mecklenburg Police Department which is central topic to the Black Lives Matter protests in Charlotte. Other in-between nodes are combinations of news anchors, politicians and users who identify as journalist or news anchors. These users are combinations of against and neutral to the protests with a few exceptions. Besides one notable news agency with high mentions of places, most in-between nodes do not discuss spatial details of the protests.

In the next section, we will discuss and offer some insights to the results of our analyses across the three layers

Discussions and conclusions

Activism is a complex phenomenon. Indeed in the current atmosphere and with the prevalence of information technology, activism happens across many different layers. But has technology transformed the way we demand justice? In the case of the Charlotte protests, we learned from our focus group studies that social media and information technology played a crucial role in bringing people to the public space. Our interviewees gave us a narrative about which places in the city were used and a rationale for why those places were important. Many of these places were identified as being important due to their strategic location, better accessibility and their proximity to many economic activities in the city.

Our interviewees all used social media of different types to diffuse information, to contact friends and organize and plan future events. However, every social media is used differently. Text messaging is used to virtually connect with friends and acquaintances. Encrypted messaging is used to communicate without the fear of being monitored. Some social media such as Facebook has features such as Events and chat group which enables better organization for future events. Some social media such as Instagram and Snapchat are multimedia focused and they are used to share images and videos of protests as they happen. Live streaming plays a crucial role in motivating people by offering the most realistic snapshot of a protest. Twitter, which is the most public but with the most restrictions, offers a platform for people to communicate with a large audience in a streamlined manner. News, arguing and some spatial organization are some usages of this form of social media.

While we recognize that different social media have different functions, we analyzed Twitter mostly due to the wide availability of the data and to get a better understanding of the dynamics of social media in the context of Black Lives Matter protests. The rich unstructured nature of social media data offers many challenges but enables us to learn greatly about how people interact in social media.

Analyzing the timestamp of tweets in the Charlotte protest shows us that Twitter responds rapidly to the events of a protest. This feature makes Twitter a very powerful tool for mobilizing and discussing protests as they happen. Even though Twitter allows users to geolocate their tweets, the public nature of the platform does not invite many people to enable this feature. Most of the spatial organization using Twitter happens through text, images, and videos.

By analyzing the text of tweets, we were able to extract location information. Many tweets do not include spatial information, however, by studying the frequency of how each specific place in Charlotte was mentioned, we were able to show that the most important places in the protests identified by our interviewees are also reflected in people's tweets. This information brings us to the point that Twitter is not used uniformly by everyone.

To go further in depth into this point, we analyze our dataset of 1.3 million tweets through the lens of social networks. Our social network analysis shed light to many interesting and important features about the usages of social media. Community detection allowed us to see that users interact mostly with individuals with similar stances to protests. Our dataset was categorized into two major communities. One community very supportive of the Black Lives Matters protests in Charlotte and one critical.

These two communities treat spatial information differently. Our social network shows that people that use spatial information in their text are mostly connected with the community that has mostly supporters of Black Lives Matters as its most influential nodes. We also observed that most of the people who use detailed spatial information are Charlotte locals. This hints us to the fact that people have different interests regarding the Black Lives Matters protests. Individuals who are against the movement mostly criticize the demands and the actions of the

protesters. On the other hands, people who are supporters of the protests, diffuse information about the detail protest places to mobilize and influence people to attend more.

Finally we can observe that the top influencers in our social network include many News agency and journalism related users, as well as politicians and professionals activists. This can again, hints us to the fact that different social media have different functions, and the public nature of Twitter allows for more news related and on the ground information, and other media might have better capabilities in organizing future events. In the future, in order to have better understanding

References

1. Welch, S., *Race and place: Race relations in an American city*. 2001: Cambridge University Press.
2. Klinenberg, E., *Heat wave: A social autopsy of disaster in Chicago*. 2015: University of Chicago Press.
3. Gordon, C., et al., *Measuring food deserts in New York City's low-income neighborhoods*. Health & place, 2011. **17**(2): p. 696-700.
4. Brault, M.W., *Americans with disabilities: 2010*. 2012.
5. *U.S. Education: Still Separate and Unequal*. 2016; Available from: <http://www.usnews.com/news/blogs/data-mine/2015/01/28/us-education-still-separate-and-unequal>.
6. *About, Black Lives Matter*. 2016; Available from: <http://blacklivesmatter.com/about/>.
7. Swaine, J., *Young black men killed by US police at highest rate in year of 1,134 deaths*. 2015.
8. Tufekci, Z. and C. Wilson, *Social media and the decision to participate in political protest: Observations from Tahrir Square*. Journal of Communication, 2012. **62**(2): p. 363-379.
9. Khonsari, K.K., et al. *Social network analysis of Iran's Green movement opposition groups using Twitter*. in *Advances in Social Networks Analysis and Mining (ASONAM), 2010 International Conference on*. 2010. IEEE.
10. Carney, N., *All Lives Matter, but so Does Race Black Lives Matter and the Evolving Role of Social Media*. Humanity & Society, 2016. **40**(2): p. 180-199.
11. Castells, M., *Informationalism, networks, and the network society: a theoretical blueprint*. The network society: A cross-cultural perspective, 2004: p. 3-45.
12. Castells, M., *Communication, power and counter-power in the network society*. International journal of communication, 2007. **1**(1): p. 29.
13. Castells, M., *Network Theory| A Network Theory of Power*. International Journal of Communication, 2011. **5**: p. 15.
14. Stoddard, E. and J. Collins, *Social and Cultural Foundations in Global Studies*. 2016: Routledge.
15. Castells, M., *Networks of outrage and hope: Social movements in the Internet age*. 2015: John Wiley & Sons.

16. Observer, C., *Inside the 48 hours that shook Charlotte: As rocks flew, riot cops fled for safety*. 2016.

Alterman, Jon B. 2011. "The Revolution Will Not Be Tweeted." *The Washington Quarterly* 34 (4): 103–16.

Earl, Jennifer, Heather McKee Hurwitz, Analicia Mejia Mesinas, Margaret Tolan, and Ashley Arlotti. 2013. "This Protest Will Be Tweeted: Twitter and Protest Policing during the Pittsburgh G20." *Information, Communication and Society* 16 (4). Taylor & Francis: 459–78.

Gerbaudo, Paolo. 2012. "Tweets and the Streets." *Social Media and*. tacticalmediafiles.net. http://tacticalmediafiles.net/mmbase/attachments/5000/Tweets__the_Streets_Introduction.pdf.

———. 2014. "The Persistence of Collectivity in Digital Protest." *Information, Communication and Society* 17 (2): 264–68.

Hardt, Michael, and Antonio Negri. 2005. *Multitude: War and Democracy in the Age of Empire*. Penguin.

Juris, Jeffrey S. 2005. "The New Digital Media and Activist Networking within Anti--Corporate Globalization Movements." *The Annals of the American Academy of Political and Social Science* 597 (1). Sage Publications: 189–208.

Negri, Antonio, and Michael Hardt. 2000. "Empire." Cambridge, MA: Harvard University Press. <http://hegel.narod.ru/knigi/empire.pdf>.