INTRODUCTION

The 1968 Supreme Court case Terry v. Ohio set the legal standard for police conduct in stop-and-frisks. The court ruled that an officer performing a stop-and-frisk should observe, “unusual conduct which leads him reasonably to conclude in light of his experience that criminal activity may be afoot and that persons with whom he is dealing may be armed and presently dangerous” (Terry v. Ohio, 1968).

Over the course of the past decade, however, the New York Police Department (NYPD) appears to have adopted an especially stringent set of standards for what constitutes potential criminal behavior. From 2003-2012, nearly 90% of NYPD stop-and-frisks concluded without subsequent arrest or recovery of weaponry or contraband (NYPD, 2003-2012). The NYPD stopped and frisked millions of innocent people in the past decade, often citing observations such as “furtive movements” or “pocket bulge” as viable grounds for stopping and frisking. The New York Civil Liberties Union (NYCLU) and other civil rights organizations have found these justifications insufficient, decrying stop-and-frisk as unconstitutional for its disregard of the Fourth Amendment that protects Americans from unreasonable searches and seizures (Goldstein 2013).

The low yield of NYPD’s stop-and-frisk practice is not the only problematic facet of the policy. NYPD stop-and-frisk data indicates that African American and Latino New Yorkers have been stopped and frisked disproportionately more than White people in New York in the past decade. From 2003-2012, 4,792,542 people were stopped by the police, of which 3,872,867 (81%), were African American or Latino (NYPD, 2003-2012). Earlier studies demonstrate the same phenomenon. A 15-month, citywide study conducted from January 1998 to March 1999 found Blacks and Hispanics composed 51% and 33% of stops, respectively, despite comprising only 26% and 24% of the city population (Gelman et al. 2007). Furthermore, the rate at which Blacks were arrested following a stop (1 arrest/9.5 stops) was significantly lower than the rate at which Whites were arrested following a stop (1 arrest/7.9 stops), indicating that police officers stop minorities on grounds that are less likely to warrant an arrest (Gelman et al. 2007).
The NYPD’s rebuttal to accusations of racial profiling has cited not racial profiling, but rather location, to be a determining factor in who gets stopped. According to the NYPD, high crime areas that are often inhabited by racial minorities are patrolled the most in NYC, and thus more minorities are frisked. Although this may be true, data indicates race is also a determining factor in who gets frisked, regardless of location. Gelman et al. 2007 found Blacks were stopped at a greater rate than Whites on weapons and violent crimes suspicion in all precincts, even precincts that were <10% Black (Gelman et al. 2007). These data raise questions as to what constitutes behavior predictive of criminal activity to the NYPD. Is being African American enough? The findings of Alpert, MacDonald and Dunham indicate yes. Alpert, MacDonald, and Dunham, 2005 measured predictors of nonbehavioral suspicions of Savannah, Georgia police officers, finding White and Black officers were significantly more likely to view a Black citizen as suspicious than a White citizen (Odds Ratio = 4.447). Thus, racial biases and schemas are likely contributing to the disproportionate number of African Americans and Latinos stopped and frisked.

With the 2014 mayoral election of Bill de Blasio, however, reformations of the NYPD’s stop-and-frisk practices are on the horizon. On January 30th, 2014, thirty days after entering office, Mayor de Blasio publicly announced his plan to accept and implement stop-and-frisk reforms put forth by NYC Judge Shira Scheindlin in her August 2013 ruling of stop-and-frisk as unconstitutional (Floyd et al. vs. The City of New York, et al., 2013; Weiser and Goldstein, 2014). This ruling was appealed in August by former mayor and stop-and-frisk advocate Michael Bloomberg on the basis that the city had not received a fair and unbiased trial from Judge Scheindlin. De Blasio has promised to drop the appeal and adopt Scheindlin’s suggested reforms, including: implementation of a federal monitor to oversee stop-and-frisk practices, outfitting a small subset of officers in at least five precincts with body cameras to record encounters, engagement in a series of community meetings to discuss reformation strategies with the public, and revision of the NYPD’s policies, training, and supervision regarding stop-and-frisk (Weiser and Goldstein, 2014).

In the age of social networking, services such as Twitter have become increasingly important activist platforms, facilitating “citizen journalism”, or a bottom-up form of news that serves to compensate for the short-comings of mainstream, top-down, media sources (Marwick 2013). Media regarding stop-and-frisk is no exception to this trend of online activism. Twitter
handles such as @democracynow and @changetheNYPD provide alternative, activist news sources for followers invested in stop-and-frisk reform. Twitter also serves as not just a news source, but as a forum for voicing personal opinion and learning about perspectives of other people. The purpose of the present study is to evaluate the role that Twitter plays in the discussion of stop-and-frisk. Specifically, tweets including #stopandfrisk were collected over a one month interval and analyzed to determine who was talking about stop-and-frisk, what the sentiments of the tweeters were (i.e. sarcastic, activist, immature), where the tweets were coming from, and how Twitter was being utilized to talk about stop-and-frisk (for discussion, for isolated personal thoughts?). It is anticipated that the data will reflect primarily United States citizens tweeting about stop-and-frisk in NYC from both a pro and anti-stop-and-frisk stances. This study also sought to determine if stop-and-frisk does indeed target minorities using published NYPD Stop-and-frisk data. Race, precinct, reason for, and outcome of stop-and-frisks from 2003-2012 will be analyzed. Considering the literature outlined above, it is hypothesized that NYPD data will affirm that stop-and-frisk is driven by racial profiling.

METHODS AND ANALYSES

Twitter Data Collection. 5,213 public tweets containing #stopandfrisk were scraped from Twitter from 1/14/14-2/15/14 using Scraperwiki. Approximately 10% of all public tweets were collected using the “garden hose” Twitter application programming interface (API) (Vis 2013). Data was not collected from 1/23/14 to 1/28/14 due to ScraperWiki error.

NYPD Data Collection. An electronic record of all stop-and-frisk forms filled out by NYPD officers from 2003-2012 was downloaded from the online NYPD Stop, Question and Frisk Report Database. SPSS was used to open and convert the files to comma separated value files.

Text Analysis. Languages represented in the dataset were determined using Microsoft Excel. Tweet content was analyzed using the online word cloud generator Wordle to produce a word cloud depicting the most frequently tweeted words in the dataset. The following high frequency, irrelevant words were deleted from the dataset: RT, to, the, in, of, amp, on, via, for, is, with, a.

Spatial Analysis. 52 tweets (1.02% of data set) with geolocation data (longitude and latitude) available were collected for spatial analysis and analyzed using two online mapping programs, BatchGeo and CartoDb. Tweets were geographically visualized overtime using CartoDb.
Manhattan and Brooklyn census data were mapped using the online mapping database Social Explorer.

**Network Analysis.** 3,034 tweets from the week following de Blasio’s announcement of stop-and-frisk reform, 1/30/14 – 2/5/14, were used to visualize the #stopandfrisk network. User ID mention and source twitter handle were used to construct the network. Gephi, an open source network analysis software, was used to for visualization.

**Statistical Analysis.** Statistical analysis was performed using R and the ggplot2 package. A Welch Two-Sample t-test was used to compare mean number of frisks from 2003-2012 in Manhattan precincts (excluding Harlem) and Brooklyn Precincts at a 95% confidence interval.

**RESULTS**

![Tweets Per Day](image)

**Figure 1.** #Stopandfrisk tweets per day, 1/15/14-2/14/14. (Source: Prohl, 2014).

Tweets containing #stopandfrisk were collected from 1/15/14 – 2/15/14 (n =5,213) (Figure 1). Daily tweets peaked on 1/30/14 when newly appointed mayor Bill de Blasio publicly agreed to adopt stop-and-frisk reforms put forth by NYC Judge Shira Scheindlin. In the days following his announcement, daily tweet numbers slowly declined from 1,066 tweets/day to around 100-200 tweets/day from 2/1/14 – 2/6/14. Tweets spiked on 2/5/14 as well; however after reviewing the tweets this appears to be due to a mass retweet about de Blasio’s reforms, and not as a reaction to a stop-and-frisk related event. There is a gap in the data from 1/23/14-1/27/14 due to a ScraperWiki failure. It is also critical to note that this data represents approximately 10% of all public tweets containing #stopandfrisk.
The most prevalent words tweeted were not surprising, as they all relate to Bill de Blasio’s stop-and-frisk reform in NYC (Figure 2). Key terms included NYPD, NYC, @BilldeBlasio, @NYCLU, appeal, mayor, police, change, action, racial, work, drop, and secret. These words appear to represent the activist voices tweeting about political reformation of stop-and-frisk, as opposed to just tweeting about the injustice of it. Many of these terms are also fairly general words - such as police, change, action, racial, secret, rather than words referencing specific stop-and-frisk cases, such as #Manning. This suggests that these tweets may constitute a discussion, rather than serving as statements about particular stop-and-frisk cases like Manning’s.

Figure 3. BatchGeo map of georeferenced #stopandfrisk Tweets, collected 1/14/14 – 2/15/14. (Source: Prohl, 2014).
The 52 georeferenced tweets were almost exclusive to the U.S. (Figure 3). There were only three outlier tweets from Stockholm, Belfast, and Liverpool. All tweets geolocated were about stop-and-frisk-reform in NYC, thus the content of the 1.02% geolocated tweets well represented the content of the entire data set. The geolocated tweets indicate equal numbers of tweets from the NYC area compared to the rest of the country. This may not be representative. If geolocation data were available for all tweets, it is likely that many more tweets would originate in NYC than the rest of the U.S. Notably, there were also multiple tweets from Texas, and not many other southern states (1 from Florida, 2 from Louisiana). Perhaps these people identify with the injustice of stop-and-frisk in NYC due to the prevalence of racial profiling via traffic stops in the Southern United States.

Figure 4. Gephi Network Analysis of #Stopandfrisk Tweets, 1/30/14 – 2/6/14. (Source: Prohl, 2014).

Networks enable close analysis of relationships between groups, rather than single elements, to better understand social or cultural phenomenon (Perer, 2010). This Gephi visualization, in which node size reflects betweenness centrality, indicates that the network of people tweeting about #stopandfrisk is very interconnected. This is likely because stop-and-frisk is an issue
localized to NYC and because the data mapped is representative of tweets collected in the week long aftermath of de Blasio’s announcement to reform stop-and-frisk. Civil rights groups such as the NYCLU and the CCR, as well as civil rights figures such as Ben Jealous and Donna Lieberman represented the largest nodes. Thus these figures and groups serve as hubs for individuals and smaller activist groups to discuss stop-and-frisk news and reform in NYC.

![NYPD Stop and Frisk Incidence by Race, 2003-2012](image)

**Figure 5a.** R Histogram of NYPD Stop-and-frisk Incidence by Race, 2003-2012. (Source: NYPD).

Figure 5a illustrates that Black people were frisked significantly more than any other racial group in New York City from 2003-2012. However, this graphic does not consider the relative populations of each race. To account for racial population size, 2010 NYC census data was used to calculate frisk rate per 1,000 people in 2010 (Figure 5b).
Figure 5b. R Histogram of NYPD Stop-and-frisk Rate by Race, 2010. (Source: NYPD).

Figure 5b reveals that the rate at which White and Black Hispanics are frisked is slightly higher than the rate at which Blacks are frisked. Despite the fact that Blacks are frisked the most (Figure 5a), they also have a significantly larger population than Hispanics in NYC and thus a lower rate. Importantly, although Figure 5a represents data collected from 2003 to 2012, whereas Figure 5b represents data from 2010, comparison between plots is valid because the racial breakdown of stop-and-frisks does not considerably vary from 2003-2012. Frisk volume differs between years, however Latinos and African Americans comprise approximately 85% of all frisks throughout the decade.

Figure 6a. Social Explorer map visualizing race in 2010 Brownsville, Brooklyn: Percentage of total population identified as “Black or African American Alone”. (Source: 2010 US Census).
Figure 6b. Social Explorer map visualizing race in 2010 Upper East Side Manhattan: Percentage of total population that identified as “Black or African American Alone”. (Source: 2010 US Census).

Social Explorer was used to map the percentage of the total population in 2010 that identified as “Black or African American Alone” in Brownsville (Figure 6a) and in the Upper East Side (Figure 6b) based on US census data. The maps illustrate that these two neighborhoods represent racial extremes; one almost entirely Black (most census tracts >90% Black) while the other is almost entirely White (most census tracts 0-5% Black). Minorities were most notably underrepresented in the exclusive census tracts that abut Central Park.

Figure 8. R line plot of Stop-and-Frisks in Manhattan vs. Brooklyn Precincts, 2003-2012. (Source: NYPD).
Stop-and-frisk counts were plotted by precinct for Brooklyn and Manhattan from 2003-2012. Mean frisk count for the Brooklyn precincts was significantly greater than the mean frisk count for Manhattan precincts (Welch Two Sample T-test, t= 9.9618, p < 0.05). Harlem precincts were excluded from the Manhattan data to best capture racial differences between non-Harlem Manhattan and Brooklyn. The Times Square precinct exhibited the highest number of stop-and-frisks overtime in Manhattan, whereas the East New York, Brownsville, and Bedford Stuyvesant precincts had the highest number of frisks in Brooklyn (and overall). The Manhattan and Brooklyn boroughs were chosen for analysis because their precincts had the lowest and highest mean number of stop-and-frisks, respectively.

Figure 8. R line plot of Stop-and-Frisk Counts vs. Major Felony Offenses, 2003-2012. (Source: NYPD).

Rapid increase in stop-and-frisk counts in NYC from 2003-2012 is not in response to increasing crime rate. Counts of major felony offenses (murder, rape, robbery, felony assault, burglary, grand larceny, and grand larceny of a motor vehicle) slightly decline over the four year period, whereas stop-and-frisk counts dramatically increase and peak in 2011.
Figure 9. R area plot of Weapon and Contraband Yield of NYPD Stop-and-Frisks, 2003-2012 (Source: NYPD).

This plot illustrates the number of weapons recovered during stop-and-frisks from 2003-2012. Despite increasing rates of stop-and-frisk, less than 1% of all stops yielded contraband or weapons during the time interval. Stops followed by frisks were selected for analysis (rather than number of stops) because frisking implies that the officer had a reason to believe the subject was harboring weaponry or contraband.

DISCUSSION

Laura Kurgan defines data as “nothing more or less than representations, delegates or emissaries of realities” (Kurgan 2013). Although data serves as a reflection of reality, it is critical to consider which reality is represented in the data. Tweets containing #stopandfrisk primarily represent Americans’ activism against the NYPD stop-and-frisk practices and excitement about New York City Mayor Bill de Blasio’s stop and frisk reform, as evidenced by tweet text analysis using Wordle (Figure 2). Tweets about grassroots, neighborhood initiatives to fight racial profiling via stop-and-frisk were also present in the data set and are indicative of the localization of stop-and-frisk to particular minority neighborhoods in NYC. Tweeted media, including an image of anti stop-and-frisk graffiti, “End stop-and-frisk. Hands off the kids!” on a Brownsville
building, was retweeted several times, serving as a bulletin to spread an activist dialogue. There is a degree of ownership to this message, as if Brownsville is a unit of people who want their kids to be protected from racial profiling. It is not surprising that many tweets about stop-and-frisk discuss reform on the neighborhood scale, as stop-and-frisk disproportionately affects minority neighborhoods.

The importance of community discussion about stop-and-frisk was also reflected in the Gephi network visualization (Figure 4). This visual reveals a highly interconnected network, with civil rights organizations and leaders exhibiting the greatest betweenness centrality. Many smaller communities of Twitter users branch off from these major nodes and interact with each other. This suggests that Twitter users following large Civil rights organizations read tweets by these public figures, and bring this information back to their smaller communities. Thus, stop-and-frisk appears to be a topic of sharing and discussion on Twitter not only at the physical neighborhood scale, but also in online communities interested in stop-and-frisk reform.

Although almost all tweets were anti-stop-and-frisk, this does not indicate that the entire U.S. public believes that stop-and-risk is a method of racial profiling. Unfortunately this study is limited to 10% of the population that chooses to use Twitter and tweet publicly, due to the limited 10% API access to public tweets utilized in data collection. Furthermore, as Farida Vis notes, it is not understood how Twitter samples its tweets to allow for different levels of access, nor are twitter users an accurate representation of the U.S. public (Vis 2013). The majority demographic on Twitter is a White, male, 20 year old. Twitter users are also more likely to live in densely populated areas and have interest in celebrities and entertainment (Mislove et al. 2011). Thus it is difficult to accurately measure public opinion using Twitter data, and the lack of pro-stop-and-frisk tweets does not exclude the potential for many Americans to be in support of NYC’s stop-and-frisk protocol. Similarly, the lack of tweets geolocated to other parts of the world does not imply that racial profiling through stop-and-frisk is only a problem for NYC (Figure 3).

In addition to Twitter data, NYPD Stop-and-frisk data and census data were also analyzed to illustrate that racial profiling drives stop-and-frisk procedures in NYC. Stop-and-frisk counts and stop-and-frisk rate per race from 2003 to 2012 were plotted, revealing a disproportionate number of Blacks and Hispanics frisked (85%) compared to other racial populations (Figure 5a). This number differs slightly from the “81%” reported above because the
“81%” represents number of people stopped, as opposed to number of people stopped and then frisked, as plotted in Figure 5. This indicates that stops of Blacks and Hispanics are more likely to lead to frisks than stops of other racial populations.

A common retort by the NYPD when presented with such data indicative of racial profiling is that minorities are bound to be frisked more often than Whites because they live in neighborhoods with higher crime rates and thus more police presence. Demographic analysis of Upper East Side Manhattan and Brownsville, Brooklyn using Social Explorer revealed extreme racial homogeneity within neighborhoods. Brownsville, the neighborhood with the highest rate of stop-and-frisk, had a >90% Black total population in 2010, whereas Manhattan’s Black population composed 0-5% of the total population (Figure 6). These maps are supported by NYPD data that indicates Brooklyn and New York to be the most and least frisked boroughs in New York City, respectively (Figure 8).

Thus, the high NYPD presence in Brownsville results in minority frisking, however is this frisking justified by a high crime rate as the NYPD claims? Although crime rate by neighborhood was not deduced in this study, overall number of major felony offenses for New York City (murder, rape, robbery, felony assault, burglary, grand larceny, and grand larceny of a motor vehicle) was compared to number of frisks from 2003-2012 (Figure 8). Despite a slowly declining crime rate throughout New York City, stop-and-frisk counts sky-rocket, especially in minority precincts in Brooklyn (Figure 7). The East New York and Brownsville precincts represent the two most-frisked precincts in Brooklyn, and also appear to have some of the most significant increases in frisk count from 2003-2012. It is possible that these increases reflect a rapidly increasing crime rate that is masked in Figure 8 by other precincts experiencing decreasing crime rates. However the overall volumetric increase in frisks over the past decade in NYC, as well as the racial disparity in frisks represented in figure 5, more likely suggests that this rapid increase in stop-and-frisks throughout New York and especially in minority precincts does not reflect an explosion of criminal activity, but rather a heightened focus on frisking minority neighborhoods on the basis of race, not increasing crime. Additionally, stop-and-frisk advocates often credit stop-and-frisk with the removal of dangerous weapons and contraband from the street. However, comparison of the number of stop-and-frisks to the number of stop-and-frisks that resulted in recovery of weaponry or contraband from 2003 to 2012 disproves this accreditation (Figure 9). The percent yield of stop-and-frisks has not exceeded 1% in the past
decade. Thus, another defense of stop-and-frisk as a policy independent of racial profiling appears to fail when presented with the data.

Although close analysis of census and NYPD stop-and-frisk data is critical, it is equally important to consider context. As Kurgan notes in her chapter “Million Dollar Blocks”, “looking at the block is essential, but it fails to make much sense unless its seen within the context of a larger metropolitan infrastructure of criminal justice and social services and vice versa” (Kurgan 2013). African Americans not only experience racial discrimination through stop-and-frisk, but in multiple dimensions of their lives. As Christopher Smith, a White man whose son is African American, expresses to The Atlantic,

“As the White father of an African American son, I am keenly aware that I never face the suspicion and indignities that my son continuously confronts…I can tell myriad stories about the ways my son is treated with negative presumptions in nearly every arena of his life” (Smith, 2014).

The emotional, physical, and psychological toll of frequently being publicly frisked by the police cannot be ignored (Smith, 2014). Multiple previous studies have documented the impact of chronic stress and anxiety due to racism on mental and physical health. A recent study looked at the effect of racial bias on length of telomeres in African American men. Telomeres are noncoding segments of DNA that compose the ends of chromosomes, and protect the coding DNA from degradation that naturally occurs with DNA replication. As humans age, their telomeres become shorter and shorter, and thus telomeres can serve as a biological marker for aging. Shorter leukocyte (a cell of the immune system) telomeres are also associated with age-related health outcomes such as Alzheimer’s and dementia, as well as depression, financial stress, and other psychosocial stressors. Chae et al. 2014 found that African American men that experienced racial discrimination at moderate to high levels in their daily life and held their own anti-Black bias against their own race, had significantly shorter leukocyte telomeres, indicative of the physiologic toll that negative racial group attitudes can take, even at the DNA level (Chae et al. 2014).

Racism by the police also has negative implications for the civic engagement of minority citizens. Lerman and Weaver found that people living in NYC neighborhoods with high rates of aggressive stop-and-frisks were less likely to make nonemergency calls to the 311 information line. Although this parameter may seem like a trivial measure of civic engagement, 311 is
actually used frequently in NYC and is a measure not heavily influenced by socioeconomic status (Lerman and Weaver 2013). This sentiment of feeling ousted from US society was also reflected in some of the #stopandfrisk tweets. Tweets such as, "@williamcander: Ahh, the #SuperBowl. That special time of the year where the USA loves Black men and acts like they’re heroes. Then back to #stopandfrisk," reveals how African Americans feel marginalized and criminalized in US society. Ridding the NYPD’s stop-and-frisk practice of racial profiling is clearly only one change of many that are necessary to enable African Americans and Latino Americans to feel at home in the U.S., protected by the police, and treated fairly and equally by the court system.

CONCLUSION
Textual, spatial, statistical and network analyses of a 5,213 tweet Twitter dataset, collected from 1/15/14-2/15/14, indicates Twitter to be an effective and utilized forum for discussion between both physical and online communities on the NYPD’s stop-and-frisk practices. Analysis of Stop-and-frisk data, published by the NYPD, demonstrates that African Americans and Latinos are subjected to stop-and-frisk disproportionately more than Whites. This data also illustrates the escalation of stop-and-frisk under former Mayor Michael Bloomberg (2003-2012) without a correlating increase in crime rate or weapons recovered during stops. It is hopeful with the 2014 election of Mayor Bill de Blasio and the adoption of multiple stop-and-frisk reforms, that New Yorkers will now be stopped only on the basis of criminal behavior, not on the color of their skin.
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