ORIGINAL ARTICLE

When Twitter Fingers Turn to Trigger Fingers: a Qualitative Study of Social Media-Related Gang Violence

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Abstract

Mounting evidence suggests that social media can exacerbate tensions among gangs that ultimately lead to violence, but serious questions remain about precisely how conflict online translates to conflict offline. The purpose of this study is to examine the ways in which gang violence can be mediated by the Internet. We conducted a sociolinguistic study with 17 Black males between the ages of 14–24 who self-identified at the time of the study as having current or former gang involvement to determine how online provocations may generate offline violence. We examine the sociolinguistic patterns of two prominent gangs on Chicago's South Side and use qualitative interviews and a vignette methodology to gather in-depth information into the nature of Internet-mediated gang violence from multiple perspectives. We identified three forms of social media communication that were interpreted as threating by participants: dissing, calling, and direct threats. We developed a framework for understanding participant responses to tweets and the potential for violence that is a consequence of such posts. Lastly, we highlight racial decoding and importance of context when interpreting the social media communication of Black and Latino youth. This study has important implications for the prevention of gang violence that is amplified by social media communication. Findings can be used to initiate conversations between researchers and practitioners regarding the role of social media for prevention and the ethical use of such tools, particularly for marginalized populations.

Keywords Gangs · Youth · Social media · Crime · Neighborhood effects

Mounting evidence suggests that social media can catalyze and amplify hostile relationships among youth and gang factions who have longstanding tensions in the community often resulting in serious injury and homicide (Patton et al. 2016a, b, 2017a, b). An emerging body of research suggests that social ties and interactions of gang-involved youth play out on social media. Despite the important role social media plays in periodic surges and steady persistence of youth violence, little extant research attempts to understand how youth perceive, categorize, and react to aggressive and potentially threatening social media posts. Therefore, a crucial challenge for researchers and practitioners working with gang-involved youth is to determine the conditions where social media use can lead the youth to become involved in violence, either as victims or perpetrators (Patton et al. 2017c). This article fills a significant gap by asking formerly gang-involved youth in Chicago to interpret communication on Twitter from two prominent crews on Chicago's South Side. We used a quantitative coding scheme to compare perceptions of tweets across the participants. Specifically, the article leverages the expertise of formally gang-involved youth as domain experts to interpret and categorize potential threats online (Frey et al. 2018), using their responses to develop a framework for understanding participant responses to tweets and the potential for violence in tweets. As such, this article makes two important contributions.

First, scholars have produced a substantial body of work identifying the significance of gang-involved individuals having a public social identity (Decker and van Winkle 1996; Klein and Maxson 2006; Goldman et al. 2014). This identity is often characterized by exaggerated masculinity, toughness, willingness to engage in violence, and significant

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braggadocio—an image that adheres to what Anderson (2000) calls the "Code of the Street," a framework for negotiating respect and avoiding confrontation in public spaces. Social media communication is another way gang-involved youth can express social identity emblematic of street culture.

Second, building on Loftin's (1986) concept of *contagion*, he argues that insults as well as messages of violence and retaliation become the spark that ignite a simmering undercurrent of potential violence between groups. Three elements are necessary for violence to assume a contagious character and spread from one incident to another: (1) concentration in geographic space; (2) reciprocal character to the violence; and (3) escalations in assaultive violence. Only recently has research in this area treated social media as a condition by which specific and general threats can be posted and quickly pass through social networks (e.g., Lane 2018; Moule et al. 2017; Patton et al. 2014), but this work is theoretical rather than empirical or focuses only indirectly on gangs. In the following sections, we review the most recent literature on social media-related gang violence, and discuss the dataset, methods, and results in this sociolinguistic study of how online provocations may generate offline violence.

Gang-Involved Youth Use of Social Media

Neighborhood conflicts are no longer limited to face-to-face tough talk on the street. Violence has expanded to a new and complex form of "beef" known as *Internet Banging*. Internet banging, a term coined by Patton et al. (2013), describes a set of social media behaviors common among gang-involved youth that include promotion of gang affiliation and threatening and taunting rivals using social media. Such communication integrates online and street behaviors while also linking aggressive communication online to violence on the street. Although there is a dearth of research examining the effects of Internet banging, nascent empirical evidence suggests that this behavior is increasingly leading to serious injury and homicide in many urban communities (Patton et al. 2013; Pyrooz et al. 2015). As gang-involved youth discuss their gang affiliation and indicate boundaries online, these virtual spaces can abruptly turn into threatening environments, where specific online behaviors may incite violence (Moule et al. 2014; Patton et al. 2013, 2014).

The communication of threats keeps intergroup violence alive; without such communication, violence in a particular context may subside. The concept of *Intertextuality* (Ott and Walter 2000) provides some explanation for the communication of threats between groups. When audiences share cultures and norms such as the "code of the street" (Anderson 2000), they bring common textual knowledges to bear upon text construction and interpretation. Therefore, when gang-involved youth produce text challenging rival gangs and inviting a

response, both the producer and interpreter of these texts understand that a response is needed to maintain respect.

These relatively new patterns in social media communication and engagement suggest that the study of gang involvement may advance previous research on cyberbullying[1] by focusing on (1) social media as an ecological context, (2) examines hyper-local language espoused by youth with current or former gang affiliations, and (3) considers the physical ramifications (e.g., physical fights, shootings) that may result from engagement on social media. We uplift the theory of intertextuality to underscore the importance of context, culture, and nuance when attempting to interpret social media communication among gang-involved youth who often use hyper-localized language when communicating within and across peer groups on Twitter.

Social media works more efficiently than delivering threats in person because of its broad, real-time communication capabilities. One individual can reach hundreds or thousands of others in a matter of seconds no matter their location, communicating threats constantly throughout time and space. Social media utilization for threats is not restricted to keywords but often include mentions of offline events, people, local institutions, and situations that may inform how and why a post is perceived as threatening (Patton et al. 2017c). In this sense, one social media spark can escalate communication between rival groups who compete for reputation, territory, markets, and the upper hand in violent encounters. The structure of social media also enhances recipients' susceptibility to such messages (Myers 2000), normalizing and routinizing the use of threats and violence through volume and regularity. It is therefore the objective of this study to uncover the content of social media communication that may have the potential to generate offline violence.

Methodological Strategies

Pyrooz and Moule (2019) reported that existing research on how individuals involved in gangs use social media falls into three categories: cyber-ethnographic research, survey research methods, and big data analysis. The first, "cyber-ethnographic research", uses ethnographic and field research techniques to interview gang-involved individuals and understand their motivation and how they use social media to further the ends of the gang. Much of this work has focused on trying to understand how individual users of social media further gang processes. Morselli and Décary-Hétu (2013) examined the role of the Internet in increased gang violence, but they noted difficulties identifying who was using gang names and whether

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[1] Cyberbulling is typically defined as bullying, typically defined as "willful and repeated harm inflicted through the use of computer, cell phones, and other electronic devices" (Hinduja and Patchin, 2018).

those individuals were indeed gang-involved. Van Hellemont (2012) examined 170 gang blogs in Brussels for themes such as music, images, gang issues, and tributes to individuals who had been killed. Patton et al. (2013) found that the promotion of gang values, especially violence and threats, were key activities on social media among gang-involved individuals. Lauger and Densley (2018) examined gang-related themes in 78 rap videos posted on YouTube, contending that the violent themes found in these videos enhanced the social and collective identities of gangs and gang members. Others employ similar strategies to learn about the ways in which gangs represent their expressive and instrumental activities (e.g., Storrod and Densley 2017) and cultivate their reputation (e.g., Hellemont and Densley 2018) online.

The second category of research on the use of social media by individuals involved in gangs employs survey research methods. Some of this research has been conducted with general population samples (King et al. 2007) or interviews with targeted groups where gang-involved individuals were highly represented (Moule et al. 2013; Moule et al. 2014; Pyrooz et al. 2015; Sela-Shayovitz 2012). This research found parallels between gang identities and activities on the street and on social media. The web was seen as an especially appropriate tool for spreading the word about reputational strength of individual gangs or gang-involved individuals. Importantly, gang-involved people in this research were more likely to use social media in support of criminal activities than people not involved in gangs.

A third approach to understanding how gang-involved individuals use social media is through "big data" analysis. Patton and colleagues (2017c) downloaded and analyzed over 8.5 million tweets posted by individuals identified by law enforcement as gang members. Key themes in the tweets included memorials to deceased gang members, violence, and substance abuse. Wijeratne et al. (2015) used *Followerwonk* search Twitter for pre-identified key words and emergent themes. Their work was largely a proof of concept that demonstrated the feasibility of their approach.

In this study, we offer an alternative methodological approach to studying the implications of social media for gangs: interpretations of social media posts by "domain experts" (Frey et al. 2018). We confront the idea that language used by Black and Latino youth who are gang-involved on Twitter can consist of a mix of African American Vernacular English, short acronyms frequently used on social media and hyperlocal contextual mentions of institutions, events, and experiences (Chang et al. n.d.). Recent research suggests that the racial decoding of social media text of Black individuals accused of a crime may be misinterpreted and monitored by law enforcement whereas the same strategies and interpretations may not occur with perpetrators of crimes who happen to be white (Patton et al. 2017d). The aforementioned strategies, while strong independently, were not sufficient for a hyper

local and contextually driven analysis of social media communication among gang and non-gang involved boys and men who are Black and Latino because they lacked domain expertise, specifically involvement of gang-involved youth and local community members in the interpretation and translation of social media text (Frey et al. 2018). As such, we designed a mixed method methodological strategy (e.g., qualitative interviews and quantitative coding scheme) that privileges the interpretations and domain expertise of Chicago Black and Latino youth who, at the time of the study, claimed current or former gang experiences.

The Current Study

We asked young people in Chicago to respond to a series of Twitter posts from Gakirah Barnes, a self-identified gang-involved youth who was killed in April 2014. Gakirah Barnes represented a faction of the Gangster Disciples and her death made national news because of her large Twitter following and active communication, as well as her self-proclaimed status as "shooter". By the time Gakirah reached age 17, she was allegedly associated with up to 20 fatal and non-fatal shootings. It is important to note that on Twitter and among friends, Gakirah identified and referred to as male. One of the challenges of analyzing social media is the inability to determine with certainty who is actually posting. This is problematic for several reasons. First, background characteristics cannot be assigned to individuals; thus, gender, residence, age, and other demographic information can only be assumed. Second, and related, researchers can only assume that an individual is indeed involved in a gang. The inability to establish with certainty that an individual who posted an image or statement is a gang member is a key shortcoming of such research. Third, the volume of social media posts limits the number of individuals capable of using software and conducting analyses. One way to address these challenges is to develop sociolinguistic approaches to understanding how various social media posts are evaluated and responded to by people who are and are not gang-involved is to create vignettes or capture actual social media posts (tweets) and presenting them to study participants for their response and appraisal.

We know little of how young people living in neighborhoods with gangs perceive social media posts, but it is an important component of understanding how they propose to respond to such posts. Social media may have specific relevance for understanding how violence is initiated, spreads, and ultimately subsides. In this paper, we seek to expand our understanding of Internet banging and its impact on real-world violence by categorizing threat levels in Twitter posts as assessed by gang and non-gang-involved young men who live in Chicago neighborhoods with high rates of violence. By using Twitter posts from a known gang-involved youth with a

large following to gauge participant responses, we can forge a firsthand understanding of how social media penetrates the lives of youth.

Methods

Sample

We used snowball sampling to recruit study participants (Atkinson and Flint 2001). Our inclusion criteria included: African American and Latino males ages 14 to 24 who live in Chicago, have experience with youth or gang violence, and use social media. We excluded individuals younger or older than the specified age and individuals with no prior experience with youth and gang violence or with social media. With these parameters, we included the target population most involved in violence, whether as victims and perpetrators. Twenty African American and Latino males met the inclusion criteria and 17 of them turned in consent forms and completed interviews. While the age range was broad, participants were from the ages of 16 to22 with a mean age of 17 at the time of the interview. Young women play an integral role in street gang violence (Miller and Decker 2001), but the first individuals who initiated our snowball sample were male, and they recommended friends and affiliates who were also male. We first met with the director of the violence prevention outreach program at the YMCA located on the Westside of Chicago and asked him to identify at least five youth he thought would be a good fit for our research study based on our inclusion criteria. The director of the violence prevention program at the YMCA was key to recruitment efforts, as he has relationships with young people who live throughout Chicago, many of whom were familiar with Gakirah Barnes because of their gang involvement, their engagement on Twitter, or other popular media. To broaden our connection with the Chicago youth, we asked the YMCA executive director to connect us to at least three other violence outreach workers who work in other neighborhoods in Chicago. We continued to interview youth connected with violence prevention organizations throughout Chicago until we reached saturation on ways in which our sample perceived, categorized, and reacted to violence-oriented social media posts. All participants live in neighborhoods with high rates of violence throughout Chicago's South and West Sides.

Data Collection

Participants completed a two-part, audiotaped, semi-structured interview. Each interview lasted between 45 and 90 min, and a total of 31 interviews were conducted over a 4-month period of time. In the first part of the interview, participants were asked to describe their experiences with gang violence, their use of social media, and how social media and

gang violence overlap. In the second part of the interview, participants were shown a PowerPoint presentation of 15 Twitter posts from Gakirah Barnes. We chose to have participants review Gakirah Barnes' Twitter posts because a media report included the Chicago Police Department validation of Gakirah Barnes' gang affiliation (Kass 2014; Main 2016). We limited presented posts to 15 because we wanted to ensure participants had enough time to complete the in-depth interview that was part of a larger research project while also appraising the content of the tweets. We identified posts that we (the research team) thought were potentially threatening or aggressive (e.g. "Jst Brought A Crate Of Guns I'm on my way Thru Lamron shoot u n Whoeva nxt 2 u Nigga dats a And1"). Our selection of the 15 posts was informed by our understanding of Chicago gang dynamics and language as well as 10 years of collective experience conducting qualitative research in Chicago neighborhoods with high rates of violence. Our goal was to test our assumptions of threatening posts with youth from Chicago who would likely be observing or responding to similar posts on their personal social media accounts. Participants viewed the tweets just as they appeared on Gakirah's Twitter profile. As mentioned earlier, Gakirah identified and was described by friends as male. The participants in this study interpreted Gakirah's posts based on the text, which frequently referenced Gakirah as male. The tweets were not edited to conform to standard English or traditional grammatical constructions and syntax. Participants were compensated with a $50 gift card.

Data Analysis

Interviews were coded using open, axial, and selective coding (Strauss and Corbin 1998). The first phase of data analysis utilized open coding within a three-person research team. Meetings were held after coding two transcripts to further refine codes. After exploring the meaning and patterns within the data, we established the final coding scheme. In this stage of analysis, we developed codes such as venting, dissing, and calling out. Research assistants coded transcripts using Dedoose (2014) qualitative data software.

The second phase involved axial coding, comparing interactions embedded within the initial open codes, while simultaneously comparing interactions to the larger concepts that emerged. For example, within the *venting* code, we looked for variation in how participants responded to tweets identified as *venting*. We looked for specific conditions or factors that shaped why participants perceived a tweet to be *venting*. These included reference to a past violent event or bragging about an act of violence. During this phase, we noted some posts were perceived as more severe or threatening than others. As such, we developed a taxonomy of violent communication that stems from participants' interpretations of Gakirah Barnes' Twitter posts. To test the hypothesis that

Table 1 Guidelines for coding forms of threatening communication

Form of communication	Guidelines
Venting	Content reflecting an expression of sharing or emotion—anger, grief, frustration—usually around an event or death
Dissing	Content that humiliates and degrades the receivers and possibly the viewers of the post
Calling out	Content that seeks to instigate a violent response from the receivers and/or viewers of the post by challenging/questioning their reputation/social status
Direct threat	Content that involves a high possibility of threat of offline violence (e.g., someone being stabbed or shot) due to the directness, specificity, and/or violent language of the post
Rap lyrics	Content having known or unknown rhythm and/or format reflecting rap lyrics
Posturing	Content with the potential to have the format of other types of communication, but is perceived and interpreted as faking, acting, and unrealistic

gradations exist in violent communication, each code was further examined to identify rival cases or exceptions. During this process, our coding scale was refined. Refining occurred, for example, when some participants identified Twitter posts that were perceived to be *threatening* by the research team due to perceived violent language, but were then noted by the participants as actual *rap lyrics*. Insights such as this informed when and how we identified posts as threatening during the coding process and underscored the importance of context when interpreting social media posts.

In the final phase, selective coding, we integrated existing categories and themes in an effort to describe how participants perceive and react to posts from Gakirah Barnes. We also sought to identify conditions and mechanisms that influence how and why they perceive some posts to be more aggressive or threatening. We supplemented qualitative data analysis with a quantitative coding scheme. Specifically, we assigned scores to participants' predictions based on participant responses regarding the likelihood of a tweet to incite neighborhood violence. Scoring allowed us to compare across study participants regarding their perceptions of Gakirah Barnes' tweets. We coded tweets as follows: 0 = *venting*, 1 = *dissing*, 2 = *calling out*, and 3 = *direct threats*. When *rap lyrics* and *posturing* were perceived by participants, the interpretation was given a score ranging from 0 to 3, based on the context and any other forms of threatening communication the participant outlined. We used standard deviations as a tie breaker where needed.

Results

We present participant interpretations of Twitter posts and report four perceived forms of threatening communication: *venting*, *dissing*, *calling out*, and *direct threat* (Table 1). In addition, our coding revealed two types of communication that complicate participants' interpretations of tweets and, thus, how those perceptions were coded: (1) text perceived as a *rap lyric*, through rhyme or known words and phrases,

and (2) text perceived as *posturing*, a common behavior to gain social status and safety in marginalized communities. Throughout the interviews, participants perceived rap lyrics and posturing in tweets containing threatening forms of communication. They also observed them in tweets without threatening forms of communication. Here, we provide quotes from some of the participants. Each participant was given a pseudonym to conceal their identity. Each participant identified as either currently or formerly gang-involved at the time of the interview.

Guidelines for Coding Forms of Threatening Communication

Of the 15 Gakirah Barnes tweets, seven received average scores exceeding 1.0 (Table 2).[2] Tweets with a score higher than 1.0 were viewed as more threatening than simple *venting* about personal troubles or making general observations. As we further detail below, study participants did not view *venting* as having the potential to lead to violence offline. The seven tweets that constituted more threatening forms of communication involved *dissing*, *calling out*, and *direct threats*.

Although all interpretations of Twitter posts fell into one or more of the forms of threatening communication, most participants had their own interpretation and explanation of why and how they would respond. For example, while one participant would ignore a *diss* or *call out* on Twitter, another may feel obligated to retaliate. Because of the complexity and heterogeneity in participants' interpretations, we chose to describe and analyze a subset of the overall Twitter posts.

We provide an in-depth analysis of seven of the 15 tweets that have scores exceeding an average of 1.0, explaining participants' interpretations of the tweets, the forms of threatening communication present in each tweet, and the contextual

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[2] All scores were computed using available participant responses. Nearly 90% of our cells were contain a response. Only one tweet (#8) maintained over five missing responses. Notably, none of the study participants with valid responses viewed this tweet as threatening.

Table 2 Matrix of the rank ordered mean likelihood of offline violence and dispersion by tweets

	ID	Tweet #														
		T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15
Subject #	1	3	2	2	3	1	0	1	0	0	3	0	0	0	0	0
	2	3	3	1	3	3	3	1	–	0	1	0	0	0	0	0
	3	3	1	2	3	1	3	1	0	0	1	1	0	0	–	0
	4	1	2	3	0	1	1	3	0	0	0	0	0	0	0	0
	5	1	2	1	0	1	1	1	1	0	0	0	–	0	0	0
	6	3	1	3	3	0	1	1	–	–	0	0	1	0	0	0
	7	1	2	1	3	3	–	1	3	0	0	0	0	0	0	–
	8	–	–	3	1	–	–	3	–	–	–	0	–	0	–	0
	9	1	2	3	3	3	2	1	0	2	0	1	0	0	0	0
	10	0	2	3	3	3	0	1	0	3	0	1	0	0	0	0
	11	0	2	1	1	0	0	1	0	0	0	3	0	0	0	0
	12	3	1	3	3	3	3	1	3	2	3	0	0	0	0	0
	13	3	1	3	0	0	0	1	0	3	0	0	3	0	0	0
	14	1	3	2	0	1	1	1	0	3	0	0	–	0	–	0
	15	3	2	2	3	1	3	–	0	0	0	3	1	0	0	0
	16	3	3	1	0	1	1	1	–	1	0	0	0	0	–	0
	17	3	3	1	3	1	1	1	0	1	0	–	0	1	0	0
	18	3	2	3	0	0	3	1	2	0	0	0	0	0	0	0
	19	3	1	3	0	3	3	1	0	0	0	0	0	0	–	0
	20	3	3	0	3	3	3	0	3	3	3	3	–	0	–	0
	21	3	2	1	0	3	3	1	0	1	0	0	3	0	0	0
	22	3	1	1	3	3	0	1	1	0	0	0	3	0	0	0
	23	3	2	3	3	–	1	3	1	0	1	0	0	0	0	0
	24	3	1	–	3	0	–	3	–	0	0	0	0	0	0	0
	25	3	1	1	3	1	0	1	1	–	0	1	0	0	0	0
	26	2	3	2	3	3	3	1	3	0	1	0	–	0	0	0
	27	3	2	2	3	1	0	1	1	3	1	1	0	1	–	–
	28	3	3	1	3	0	1	3	2	0	2	0	0	0	–	–
	29	3	2	3	3	3	–	1	0	0	0	0	0	0	0	0
	30	3	3	2	–	3	0	1	0	0	1	0	0	0	0	0
	31	0	1	3	–	1	1	2	0	1	0	0	0	0	0	–
	Mean	2.3	2.0	2.0	2.0	1.6	1.4	1.3	0.8	0.8	0.6	0.5	0.4	0.1	0.0	0.0
	(SD)	1.1	0.8	0.9	1.4	1.2	1.2	0.8	1.1	1.2	1.0	0.9	1.0	0.2	0.0	0.0

NOTE: Higher values equate to a greater perceived likelihood of offline violence; 0 = venting, 1 = dissing, 2 = calling out, 3 = direct threat

Tweet #1 Jst Brought A Crate Of Guns I am on my way Thru Lamron shoot u n Whoeva nxt 2 u Nigga dats a And1;

Tweet #2 All while mfks sneak dissing on me, u kno u would never..do it to my face;

Tweet #3 Fuck Oblock Dats A Hoe Block Turn Dat Mf into a No Block talm Bout Yall making Noise nigga we ain't Heard No Shots;

Tweet #4 Rip lil b this cracra cpdk they trying to take the rest of EBT thats left shit real time to turn up ten nouches;

Tweet #5 Got Gunz like da military catch a body n beat it n pulmonary;

Tweet #6 Kill kill kill Yall kno wat cum wit dis shyt;

Tweet #7 Fuck JMoney n Throw Da Rakes up 2 Piss Da Oppz Off;

Tweet #8 Niggas Hating on Me but I kno why Cuz I Got Shootaz on Deck bitch ask TY;

Tweet #9 I Knew Dat nigga was a Bitch should of killed his ass wen we went on dat lick;

Tweet #10 Lil Roc got his ass Rocked on 79th n Essex;

Tweet #11 Dis Beretta Keep Me Safe like Home plaDis game so foul but I made a vowel 2 a code dat I'd never break;

Tweet #12 Got My Shoota K.I Wid Me We Love Turning Up _@;

Tweet #13 Ima Die a Real nigga we all got dat day coming;

Tweet #14 @_____ let's have dis session;

Tweet #15 @_____ Doing Da Dope wit Da Lean right now

factors that cause participants to perceive some tweets as more threatening and more likely to incite violence than others. An in-depth analysis includes the following: (1) a general description of the language components for each tweet (e.g., names, places, known gang language), providing a foundational context for further interpretation; (2) the most frequently coded form of threatening communication; and (3) another frequently coded form of threatening communication. We also provided an examination of the complex components of tweets that often led to multiple interpretations.

"Jst Brought A Crate Of Guns I'm on my way Thru Lamron shoot u n Whoeva nxt 2 u Nigga dats a And1"

This Twitter post was most frequently coded as a *direct threat*, with 70% (*n* = 21) of participants in agreement and none viewing this tweet as *venting*. Gakirah states she is going to go to an opposing gang territory to shoot people. "Lamron" refers to a specific territory of a gang in opposition with Gakirah's gang. Participants in our study quickly pointed out that "Lamron" is actually "Normal" spelled backwards. Normal is the name of a street in the Englewood neighborhood of Chicago, where a rival Black Disciples gang called "300" has territory.

Max, a 23-year-old Puerto Rican participant, responds, "I would take this as a very serious threat. Um, I think I'd lock my doors and stay inside at this time." Max understands this post to be life-threatening to the people of Lamron and to himself. This is substantiated when he suggests that he would lock his doors and stay inside to avoid being involved and harmed. His response is an example of the impact social media threats can have on how individuals navigate their neighborhoods even when a threat is not personally directed towards them.

Similarly, Brian, a 16-year-old Latino participant suggests, "Probably gonna do a drive-by. They don't care who's gonna be with you. They're just gonna shoot you and whoever's with you." Like Max, Brian perceives this post to be very serious and likely to lead to violence, as he explains that someone may do a drive-by (driving past people while shooting at them). Although a drive-by is not mentioned in the post, Brian understands this to be a warning that one may occur. He also outlines the reckless nature of the threat when he comments on the shooter's lack of care or remorse, a willingness to kill everyone with you.

While a majority of participants interpreted this post as a direct threat, another 20% (*n* = 6) suggested that it is *rap lyrics* and 17% (*n* = 5) perceived it to be *posturing*. Roberto, 20-year-old Latino participant, suggests:

> Okay, these are rap lyrics. I've heard this song. I think it's Lil' JoJo or one of the people that's into it with Chief Keef, but this guy is obviously a poser. This is not his words and he probably just thought it sounded cool, so he repeated it.

Not only did Roberto interpret the post as rap lyrics, he sees this person as a poser trying to fit in, posturing for reputation, seeking social status, and attempting to sound "cool." He recognizes the source of the lyrics as a local rapper who is in a gang rivalry with another local rapper. Roberto's knowledge of the local context and area rappers causes him to disbelieve the seriousness of the post. Even though the post contains threatening language, referencing guns, a specific location,

and an intention to enact violence, Roberto does not take this post as a threat to his or anyone else's safety because of the use of rap lyrics and a display of posturing.

"All while mfks sneak dissing on me, u kno u would never...do it to my face"

This tweet was most frequently coded as a *call out*, with over 43% (*n* = 13) of participants in agreement. The phrase "mfks" is an abbreviated obscenity (motherfuckers). "Sneak dissing" is a covert verbal attack directed at another person, often indirectly through conversations with peers, rap lyrics, or social media posts. Gakirah suggests that while people are insulting her behind her back, they would never challenge her in person.

When asked to interpret this tweet, Austin, an 18-year-old Latino participant, says, "Well, I would have thought, 'Well, he's stranding me. He's calling me out or he's calling me a bitch.'" He continues, "Like, He's calling me a 'pussy' cause he's saying I won't say it to his face, or something." Austin interprets the Twitter post as if it was intended for him. He first identifies the intentionality of the post, using the term "stranding," meaning giving him no choice. He is forced to retaliate or he will be deemed a "bitch" and a "pussy," epithets ridiculing one's lack of strength and toughness. These terms have the propensity to incite offline violence.

Michael, a 17-year-old Mexican participant offers a similar interpretation. He states, "He's saying all these people are talking shit about him, but they won't tell him directly. They're probably talking shit to him on Facebook, but they're not telling him direct, in his face." Michael suggests that people are likely Internet banging with Gakirah, but not engaging in face-to-face tough talk with her on the street. He believes that the sneak dissing happens through social media posts, even though it is not specified in the tweet, suggesting that Michael may have experienced this before.

Some participants were also quick to point out that this tweet is a *direct threat* that should be taken seriously, with 27% (*n* = 8) of participants in agreement. Kenny, an 18-year-old Black participant states, "Like they wanna fight. It's like an indirect status, like talking about somebody like yeah, I know that you's talking about me behind my back so do it to my face. That's basically what they say." Kenny's first reaction is that Gakirah wants to fight. He appears to understand the concept of sneak dissing and recognizes the post as a challenge to those who are engaging in the sneak dissing: "Do it to my face." Kenny is also aware of the indirect nature of the post, but suggests that Gakirah's intention was physical violence, as she challenges the recipients of the post to back up their sneak dissing with action.

"Fuck Oblock Dats A Hoe Block Turn Dat Mf into a No Block talm Bout Yall making Noise nigga we ain't Heard No Shot"

Several participants interpreted this tweet as a *direct threat,* with 40% (*n* = 12) of participants in agreement, while only one participant identified it as *venting.* "Oblock" is the name given to a housing complex located on Chicago's South Side. It is named in honor of Odee Perry, a Black Disciples gang member who was killed there in 2011. The area is claimed by the Black Disciples and is well known for a high frequency of gang violence. Gakirah's gang (STL/EBT) is a rival group with close proximity to O Block, hence her statement, "Fuck Oblock Dats A Hoe Block Trun Dat Mf into a No Block." Gakirah also challenges the rival gang by saying "talm about Yall making Noise nigga we ain't Heard No Shot," suggesting that the rivals may be making threats of violence but they are not actualizing those threats by firing gunshots.

When asked to interpret this tweet, Antonio, a 22-year-old Latino participant suggests, "He's calling out a block. That's something that's looking to start something with people." Antonio interprets this post as a *call out* and then a *direct threat* as he believes the intention is to ultimately instigate violence with "Oblock," either through further digital altercations or physical violence. James, an 18-year-old African American participant has a similar interpretation: "Ah, he talkin' bout how they really be talkin' bout what they be doin' but they don't really be doin' nothin.' And how he gon' shoot them up." James suggests that O Block gang members make insults and threats, but they do not carry out those threats. He interprets "Turn Dat Mf into a No Block" as an indication of potential violence against O Block, by stating that Gakirah "gon' shoot them up." Participants also interpret this tweet as *rap lyrics*, with 30% (*n* = 9) of participants in agreement. Roberto, a 20-year-old Latino participant, responds to this tweet by saying, "More rap lyrics, also from Lil Jojo, who's dead, actually. I don't know why people keep quoting this guy." Lil Jojo was a prominent Gangster Disciples gang member and rap artist, killed in a drive-by shooting in 2012. He frequently challenged the Black Disciples (BD) gang, 300, in his songs by saying "300k," "3hunnak," and "BDK" (adding a K, for Killer, after a gang's name means it is your enemy). Other participants agreed that this tweet sounds like rap lyrics, even if they did not know the artist. For example, Tony, a 19-year-old Latino participant, says, "It sounds like another rap lyric, but threatening. You know what I mean? Just mocking— they're mocking the enemy, you know what I mean?" Jay, a 16-year-old Black participant, agrees, "That's a quote from a song."

"Rip lil b this cracra cpdk they trying to take the rest of EBT thats left shit real time to turn up ten nouches"

This tweet was most frequently coded as a *direct threat*, with over 66% of participants (*n* = 19) in agreement. It also maintained the greatest variance of interpretation of all Barnes' tweets presented to participants. A total of eight study participants viewed the tweet as *venting*, which was more than any of the seven tweets for which we provide an in-depth qualitative analysis. "Lil B" refers to Raason "Lil B" Shaw, a friend of Gakirah who was allegedly killed by a Chicago police officer in the Woodlawn neighborhood on Chicago's South Side. Gakirah felt the police killing of Raason was an intentional attack on her gang, EBT ("Everybody Trapping"), stating the police, referred to as "cpdk" or Chicago Police Department Killer, are "trying to take the rest of EBT." In response, Gakirah calls on her Twitter network to "turn up ten nouches," or be vigilant and ready to retaliate against the police, while protecting EBT affiliates from imminent threats.

Antonio, a 22-year-old Latino participant interprets the tweet, stating, "Basically, they're saying the cops killed somebody in their clique and that they're looking to retaliate. They're gonna turn it up basically saying that they're gonna do something to retaliate." Antonio has a clear understanding of several important points that make this comment an interpretation of *direct threat*. First, he understands the reference to "cpdk" as Chicago Police Department Killer. Next, he recognizes "EBT" as a reference to a local gang. Lastly, Antonio interprets "turn up ten nouches" to suggest retaliation and violence towards the police for killing an individual. Alex, a 23-year-old Puerto Rican participant, has a similar interpretation: "Well, I just got from that, it's time to start a war. They just took somebody from them and, now, it's time to start a war." Daniel, a 16-year-old African American participant, also agrees. "They going to like do something," he said.

Conversely, 28% (*n* = 8) of participants interpreted this tweet as a form of *venting*. Michael, a 17-year-old Latino participant, responds to this post by saying "When they get angry, they go to Facebook to air out their problems." Michael points out that social media, specifically Facebook, can be an outlet for youth to "air out their problems," or express anger, sadness, and other feelings associated with grief and loss. In this tweet, Gakirah continues to mourn the loss of her friend, Raason, while also calling on her Twitter network to band together for protection. This shows that Twitter and other social media can be platforms for youth to collectively grieve the loss of friends and family and organize for protection and safety in times of crisis.

"**Got Gunz like da military catch a body n beat it n pulmonary**"

Many of the participants interpreted this tweet as a *direct threat*, with 41% ($n = 12$) in agreement. Using rhyme to express herself, Gakirah states that she is equipped with a large number of guns, comparing the number of guns in her possession to military stock. She believes she can kill someone, get charged for murder, and win the case. Jesse, a 23-year-old Latino participant, states: "Basically he's saying he got a lot of guns… and he's saying he ready to catch a body. Basically he wanna kill somebody. He got guns. He want you… And he ain't worried about catching the case." Jesse believes Gakirah is communicating two positions: her ability to kill someone and her desire to do so. He understands that Gakirah presents as someone unafraid of the consequences associated with the intent of her communication. Henry, a 15-year-old Mexican participant, had a similar interpretation, "He's, basically, saying that, "We catch you lacking, we make sure you're not gonna get outta there." That you are gonna be dead, on the spot." Henry uses the term "lacking," which describes someone who is caught off-guard or in a vulnerable position. He suggests Gakirah poses a direct threat. If she were to discover a person with their guard down, she would kill them.

Conversely, some participants 34% ($n = 10$) found this post to be emblematic of *rap lyrics*. Understanding the tweet as actual rap lyrics complicated participants' ability to distinguish the threat level. While some participants understood rap lyrics to be non-threatening, others viewed them as a way to send a subversive message. Chris, an 18-year-old Latino participant, explained, "Probably they're trying to put one of their little rap quotes out there but at the same time trying to say something to other people." Chris understands that Gakirah was using the rap lyrics to send a message to her broader social media audience.

"**Kill kill kill Yall kno wat cum wit dis shyt**"

Some of our participants interpreted this tweet to be a *direct threat* with 33% ($n = 9$) of our sample in agreement. Gakirah believes killing is required for her to live the life that she lived. She thought it was necessary to engage in violent behavior to survive in gangs and on the streets of Chicago. Kenny, an 18-year-old Black participant, substantiates this position when he states, "That just violent stuff like they letting you know that they own that. They trying to kill, take lives." While Kenny does not interpret a threat of immediate violence, he shares that this person is involved in killing people and will not hesitate to do so in the future. He understands that Gakirah admitted and took responsibility for the life she chose, which involves engaging in violent acts—including murder.

Alex, a 23-year-old Puerto Rican participant, suggests, "Again, this is another serious threat. I feel like your life is at risk; if you get this message or you see this message like this, I feel you should take this very seriously." Alex stresses the importance of taking this message seriously and being on high alert, expecting the person who composes the tweet to follow through on her threat. Furthermore, he states that the life of the person to whom this tweet is directed is at risk. He expresses the belief that Gakirah has the intention of ending someone's life and will follow through.

Conversely, 30% ($n = 8$) of participants found no threat of violence present in this tweet, interpreting it as *venting*. They understood this tweet to be an expression of daily hardship and loss in the community. Hakim, an 18-year-old Black participant, responds to this tweet by saying, "Probably just speaking his mind … Basically, if you in the streets, you know what come with the streets." Hakim believes the tweet reflects the true, unfiltered thoughts and experiences of the person posting it. He follows this up by referencing what "comes with the streets," speaking to a specific understanding of unwritten rules that characterize how individuals should interact, perform, and respond to violence and aggression. For individuals who grow up in neighborhoods with high rates of violence and marginalization, this set of rules is learned through day-to-day interactions; in this instance, it is narrated online for others to see and adhere to (Anderson 2000).

"**Fuck JMoney n Throw Da Rakes up 2 Piss Da Oppz Off**"

A majority of participants interpreted this post as *dissing*, with 77% ($n = 23$) of participants in agreement. Prior to his 2013 death, "JMoney" was a member of a Black Disciples gang called "300," and located in O Block. Gakirah's gang, a rival Gangster Disciples group, uses the "rake" or pitchfork as one of its symbols. Therefore, "Throw Da Rakes up" refers to flaunting its gang sign to "Piss Da Oppz Off." In this case, throwing up their sign at the rival O Block 300 gang.

Kyle, a 20-year-old Latino participant, suggests, "So more gangbangers basically dissing one gang member, and they're throwing up their gang signs to piss off the other gang members." Kyle recognizes this post as a direct diss to a gang member, in addition to further dissing and upsetting other gang members by mimicking their gang signs. Due to the instant audience that witnesses a tweet, disses of this nature can challenge one's social status and damage one's reputation. Kyle understands the specific gang sign "Da Rakes," while he discerns the nature of the gang sign's direction at the "Oppz," other gang members. This displays Kyle's knowledge of and experience with complex terminology used by gang members on Chicago's South Side. Michael, a 17-year-old Mexican participant, agrees, "He's saying throw a fork up just to make em' mad. Like, throw a different gang sign up, just to piss em' off cause they know that it's not their gang sign." A number of participants ($n = 5$) also felt this post was a *direct threat*.

George, a 16-year-old Black participant, responds, "They try-ing to get 'em mad so they could come in they hood and kill em." George feels this post has the purpose of insulting a gang member, through imitating their gang signs with the intention of inciting anger and retaliation. However, it is unclear wheth-er George believes that Gakirah or the people to whom the tweet is directed will enact violence. Both have the potential to be true.
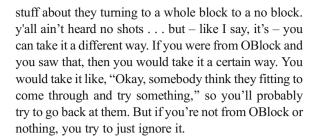
Overall, the participants highlighted the importance of con-text when interpreting hyper localized text from marginalized groups on Twitter. The distinctions between direct threats and other forms of communication were dependent upon the par-ticipants' interpretation of the language, their familiarity with the events, institutions, and experiences noted in the text. Participants who were more familiar with the lyrics mentioned in the Twitter posts were less likely to identify a post as threat-ening. Understanding of hyper local context had the power to change the connotation of a post as threatening, which could lead to law enforcement intervention, to a purely innocuous post.

The Complexity of Interpreting Tweets

Interpreting perceivably threatening tweets is complex and highly dependent on one's understanding of offline local conditions and other contextual factors. Important contextual factors include an understanding of (1) local language (e.g., EBT, cpdk, and Da Rakes); (2) local geographical environments and territory (e.g., O Block, Lamron, and 79th n Essex); (3) how and why individ-uals use social media (e.g., using Facebook to air out problems or mock the death of a rival gang member); and (4) other nuanced and subtle cues that should be considered in order to determine the likelihood of a tweet escalating into offline violence. Study participants used these cues to understand the legitimacy of the writer, the intent of the message, and the seriousness of threat informing the likelihood of violence. However, all participants demonstrated different under-standings of the same cues, which is represented by the level of dissensus reported in Table 2. This led some participants to feel that a tweet was just someone "talking to talk," whereas others would have contacted the authorities or ignored the post to protect themselves and their family members from involvement and possi-ble victimization.

For example, when interpreting the post "Fuck Oblock Dats A Hoe Block Turn Dat Mf into a No Block talm Bout Yall making Noise nigga we ain't Heard No Shots," Jesse, a 23-year-old Latino participant, states:

> It sound like he's trying to rhyme . . . This is somebody who don't like OBlock. They just talking a whole lot of

stuff about they turning to a whole block to a no block. y'all ain't heard no shots . . . but – like I say, it's – you can take it a different way. If you were from OBlock and you saw that, then you would take it a certain way. You would take it like, "Okay, somebody think they fitting to come through and try something," so you'll probably try to go back at them. But if you're not from OBlock or nothing, you try to just ignore it.

Jesse describes the complexity of interpreting posts online. First, he recognizes a rhythmic pattern in the tweet that may have indicated it was a rap lyric. He infers that the author dislikes O Block. However, he then shares that the interpreta-tion of this post would depend on whether the reader is from O Block or not. If a reader is from O Block, they would likely take offense at this post and perceive it as a threat of violence. They may infer that someone is "fitting to come through and try something," that someone is on their way to harm people from O'Block. If a reader is not from O'Block, the post would not involve them—as Jesse states—"you just try to ignore it" (the animosity in the post), rather than getting involved in a situation with which you are not directly concerned.

When interpreting the post, "Kill kill kill Yall kno wat cum wit dis shyt," Chris, an 18-year-old Latino participant, shares three possible interpretations:

> Some person putting what he's all about that you know, killing is his thing I guess. Some people don't even mean it they just put it just to put it . . . Maybe sometimes they're being serious because maybe that's what they're feeling. Maybe sometimes they just wanna look tough and they just put it.

Chris interprets a *direct threat*, *venting*, and *posturing* all in one tweet. He says that Gakirah could be serious by talking about killing, could be expressing her feelings and posting it just to post it, and could be trying to look tough online. Chris' interpretations highlight the variety of ways a reader of a tweet could perceive it. He displays his knowledge of online posting and sharing, gleaned from personal experience, which leads him to believe that the tweet could have a variety of possible intentions. However, it is unclear whether Chris believes this post has a high likelihood of leading to offline violence, an ambiguity that amplifies challenges regarding the inter-pretation of threats communicated on social media.

The variation in interpretation reinforces the need to con-sider the lens through which readers are interpreting tweets and other social media posts. Each participant brought a unique set of experiences that shaped different interpretations of the same tweet and their experiences informed the level of threat they perceived. This made achieving consensus for one meaning of a tweet unlikely.

Discussion

The use of social media has grown dramatically, penetrating most aspects of life and the lives of most individuals in the USA (Duggan et al. 2015). We advance current research on social media-related gang violence by three social media behaviors and their offline characteristics that were interpreted by individuals for whom at the time of the study were either current or former gang-involved youth in Chicago as indicators for future real world violence: dissing, calling out, and direct threats.

Dissing involved specific references to individuals, locations, or groups in a manner that is meant to humiliate or degrade that stops short of attempting to instigate violence. *Calling out* posed a greater risk for initiating violence. Twitter posts that involved a specific reference to individuals, locations, and groups as well as challenged the individuals, locations or groups specifically posed a high risk for violence as assessed by our respondents. The final category, *direct threats*, identified individuals, locations, or groups with a specific reference to two or more categories and an imminent threat of violence. For example, respondents saw Tweets that identified a group and its neighborhood that was disparaged for its physical weakness or lack of heart as catalysts for violence in the short term.

The findings of this study provide a number of advances in our understanding of the role of social media in urban violence. First, the Twitter accounts of prominent gang-involved youth have large numbers of followers. As a consequence, these individuals (or their surrogates who may do the actual tweeting) have considerable impact on the perceptions, cultural values, and actions of a large number of individuals. As such, social media has expanded the reach of gangs. The transmission of gang culture by word-of-mouth and "old media" is a relic of a previous generation of gangs.

Second, messages of violence, dominance, and retaliation among gang-involved individuals are transmitted quickly and efficiently on social media, often fueling threats of violence online. Future research is needed to examine the extent to which online aggression correlates with violence on the street. Feuds that, in a pre-social media era, may have subsided due to arrest, shootings, or the loss of initiative among members can be kept alive.

Third, the messages transmitted via social media—especially Twitter—by gang-involved individuals have meaning for their followers. There is no "instruction manual" or set of "FAQs" to guide Twitter followers in their interpretation of or response to the postings of individuals involved in gangs. Rather, these individuals have a shared cultural understanding. While study participants clearly displayed dissensus in their interpretation of tweets, both our quantitative and qualitative data reveal a high degree of consensus as well. Indeed, many participants clearly understood the tweets *calling out* or *direct*

threats. The public nature of these tweets, particularly gave Barnes' the status as a well-known and prominent Chicago gang member, is why we suggest online activities may have the potential to spill over into offline violence.

Finally, and perhaps of primary concern, "the call to action" explicit in many tweets does not go unheeded in many instances. Such calls respond to many aspects of the code of the street (Anderson 2000), which emphasizes toughness, maintaining respect, and responding to threats. Many youth go online to seek affirmation from their peers—to gain support for their thoughts and feelings. At times, they may be unaware of the possible consequences and audience of their posts. Due to the extensive and complex nature of privacy settings on social media and the lack of preparation youth have access to before they engage with large networks of people beyond their neighborhoods, they may be unaware of the reach of their words. The allure of a ready audience could potentially serve as a much-needed outlet to share experiences with other youth. We contend that it also offers them the possibility of being understood—or minimizes the possibility of being misunderstood. The frustration and stress that comes with not being heard requires an outlet. Participants noticed this need for gang-involved youth to be heard and were able to discern this nuanced sharing.

Prevention

The use of social media data for the study of gang violence has important implications for prevention. For example, the features of social media, which include text, images, video, emojis, and hashtags can be used for automatic identification of behaviors, topics, and conversations that connote the intent to commit violence or discussion of past violent events and experiences. Importantly, social media may also provide deep insights into root causes and pathways to violence by showing connections to mental and physical health, neighborhood engagement, and proximity to psychosocial resources and city-wide support from local politicians (Patton et al. 2018). Along these lines, computer scientists, social scientists, and community groups should work together to create inclusive and ethical AI systems that can thematically group social media posts regarding relevant events and conversations into categories (with particular attention to those which seem to promote violence or cyberbullying). This, then, can serve as valuable information to social workers and community-based organizations in their efforts to address and prevent harm.

Ethics

Social media data by youth from marginalized populations should not be used by researchers without the proper ethical considerations. While analyzing social media data from gang-

involved youth may offer important insights into the etiology of gang violence, it is important to consider the ethical implications of interpreting someone's social media posts. These ethical considerations include considering how the study population may be impacted by the research, protecting privacy and being transparent about our methodology and obligations to ensure that our research does not further harm or marginalizes the study population. In this study, we only use publicly available tweets from a deceased gang-involved youth. Under normal circumstances, we would alter tweets to render them unsearchable, but because our primary social media user was highly discussed in several new media outlets, we opted not to do this. In addition, all interviews were conducted in a private room identified by the population so that participants could more freely discuss their interpretations of the posts without others becoming aware of their participation in the study.

Limitations

This study, however, was not without limitations as the analysis focused on interpretations of Twitter communication from participants who affiliate with violence prevention programs in Chicago. As a result of their participation in a violence prevention program, our participant's perceptions of tweets may have been filtered through the lens of the organization. Moreover, our sample consisted of only male interpretations of Tweets from Gakirah Barnes although Gakirah identified as male on Twitter. A sample that produced interpretations from female participants could provide a more robust understanding of context and nuance in the Twitter posts. In addition, our selection of tweets omitted ones with positive sentiment thus potentially framing how participants should categorize the tweet. Lastly, our wide age range to include participants in different developmental stages may have affected how the participants interpreted the results. Future studies evaluating social media-related communication could benefit from a more diverse participant sample to garner a most robust analysis of social media analysis that spans across age, race, and socio-economic background. Introducing a random set of tweets to include negative and positive sentiment might allow for a naturalistic examination of how social media users assign meaning to text.

Conclusion

Understanding how youth use social media and how this use shapes their relationships is a vital aspect of understanding the pathway and directionality of offline environment and context on social media communication and behavior. This study could begin important conversations between violence prevention organizations, schools, and law enforcement for considering social media as a tool for the prevention and

intervention of violence. To be sure, interpreting tweets is not an exact science but enlisting the active assistance of young people in the process (Frey et al. 2018) is an important step in contextualizing content and identifying the practice of how the offline environment and experience shape social media communication in ways that may lead to violence.

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