



Gang Presence in Social Network Sites

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Abstract

From the start of the new millennium, social networking sites have become very popular. These sites have provided a space for many to vent their feelings, get new and connect with old friends. Unfortunately, the same sites have been misused by criminal groups for colliding with similar groups and also recruit new individuals to this group. This present paper is a qualitative study which aims to analyze the presence of gangs in the social networking sites, especially in Canada and also in other countries. The results of this study indicate a large presence of gangs in social networking sites.

Keywords: Social networking sites; cyber crime; gangs; criminal groups; Canada.

Introduction

Social networking sites are one of the leading trends in the ever-evolving internet 2.0. Facebook, the most popular of these websites, now has more than 800 million active members (Facebook, 2012), making its population larger than that of most countries. The time spent on such networks by each person has also increased dramatically over the last few years as individuals increasingly rely on them.

Over the past few months, stories of youth gangs using these sites to distribute videos of beatings have surfaced in the mass media (Ahlert, 2011). These reports state that criminal groups have been using social networking sites to coordinate illegal activities such as the transport and exportation of stolen metal (Linsell, 2012). Many journalists have confirmed that an increasing number of criminal organizations are turning to online social networks to communicate privately (Emery & Salazar, 2012) and also to insult their enemies. An example of this would be “the head of a biker gang in Australia[who] recently used his Facebook page to taunt the people who had tried to kill him three times and to insult police officers who had given him a driving ticket (Monfried, 2012). Consistent with Morselli and Décary-Hétu’s previous findings (forthcoming), law-enforcement agencies have also been active on Facebook and other online social network platforms to warn citizens of risks (e.g., leaving their houses unprotected at Christmas) or to solicit information on ongoing investigations (Pyle, 2012).

Using a keyword-based approach, this paper will evaluate how criminal groups in Canada and abroad are taking advantage of online social networks to recruit new members

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and broadcast messages both publicly and privately. The first section presents an overview of the evolution of social networking media since their inception in the 1980s. The second section reviews previous studies on the subject, which demonstrate that there has been a shift over the past few years and that gangs such as the Mexican cartels are now using social networking sites to monitor their enemies and launch propaganda campaigns. Discussion of data and methodology follow, with a presentation of the keyword-based approach adopted by the researchers and the dataset collected in the fall of 2011. The fourth section presents the results of our data collection, which indicate that the presence of organized crime in social networking sites has increased sharply over the last year and that their footprint on Facebook and Twitter is larger. Finally, the last two sections discuss our results as well as our recommendation that these social networks be monitored on a regular basis in order to effectively keep up with criminal organizations online.

Online social networks

Social networking websites are “web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system” (Boyd & Ellison, 2007). The first expression of such services is found in the 1980s’ Bulletin Board Systems or BBS (Zhongbao & Zhang, 2003) which were built around computers that allowed a limited number of people to dial in through phone lines and leave messages and exchange files. This very basic (and text-only) interface was popular amongst underground computer enthusiasts (Craig, 2005) who still had to wait until 1997 for the first “recognizable social network site”, SixDegrees, to launch (Boyd & Ellison, 2007). This first service was free and very easy to use, even for neophytes. For the first time, users had the possibility to create online profiles that allowed them to connect with friends and friends of friends.

The success of SixDegrees and other early networking sites did not go unnoticed. Employees of an Internet start-up recognized the potential behind social networking sites and, in a matter of days, created a website they called MySpace. This website was similar to previous services in that it asked its members to create profiles and network with their friends but it went even further by allowing users to change the layout of their personal page to reflect their own personality. It also provided a venue for musicians to share their music with millions of people. The flash music player on MySpace is now known to music lovers all over the world and the social networking site even has its own record label.

The success of MySpace was instantaneous (Boyd & Ellison, 2007). In 2006, it was the most popular social networking site on the Internet, largely because all profiles were, by default, open to everyone. This ensured that people could easily find each other but such openness occasionally led to problems. The website was criticized because it allowed stalkers to harass their victims and children to be bullied (e.g., “cyber-bullying”). In the summer of 2011, MySpace was sold for \$35M to a digital advertising agency, a devaluation of 94% since its previous sale in 2005 (Blackden, 2011). The sale was intended to kick start the platform but has yet to achieve its goal as membership has sharply declined over the past few years. MySpace is now seen as a marginal player in the social web.

MySpace’s problems pushed many users towards a trendier and more privacy-conscious social networking site, Facebook. Facebook offered its members a rich environment that

allowed people to stay in touch through messages, photos, videos, and games. Although initially limited to college students, the site was gradually made available to everyone over the age of 13. Today, Facebook boasts more than 800 million users, half of whom log in every day (Facebook, 2012).

As with MySpace, Facebook's former strengths have become its weaknesses. New applications, messages and warnings are constantly distracting the users. Moreover, Facebook has also tried to make more and more profile information public by default. The site has changed its default privacy settings numerous times over the last few years, which has created many problems for users who would prefer to keep their personal information private. Such changes have pushed many Facebook users to turn toward the latest social media contender - Twitter.

Twitter was launched in 2006 and, unlike Facebook and MySpace, it was integrated from the start with cellular telephones making it much more accessible. Twitter's unique feature was the tweet: a 140-character message that users share with readers throughout the world. At first, such tweets were often quite mundane, but over time a new form of art was created - call it the art of concision. It became a challenge for Twitter users to deliver the most effective message while using as few characters as possible. Tech enthusiasts were the first to adopt the service when it was launched and they loved the direct connection with others. There was no application, pictures or gifts to distract them from the tweet - only messages exchanged between one person and his network of contacts. All tweets are public by default which means that while a person can follow (receive all the messages from) a specific user, it is also possible to read all the messages from all the users. Such openness created a strong sense of community among the members of this social networking site. Twitter is now integrated into many platforms, including operating systems and mobile phones. Companies and individuals take advantage of the direct connection it provides to interact with customers and friends. Even celebrities seem to be just a tweet away.

Given the popularity and personal data gathered by services like Twitter and Facebook, Google has recently launched its own version of a social networking site: Google+. The Mountain View Company has registered more than 90 million users (Barnett, 2012) in the span of a few months and its contact management and pure design has generated very positive reviews. As with many new trends on the Internet, most users are early adopters and tech enthusiasts.

Gangs in the social web

While the popularity of social networking sites has exploded over the past few years, the question of how criminal organizations use these platforms to recruit new members and to broadcast their message has not garnered much attention in the academic world. As mentioned in the introduction, many journalists have however published anecdotal evidence of the use of social networking sites by organized crime groups, mainly to document and coordinate their illegal activities. Nevertheless, none have been able to prove that gangs used networking sites such as Facebook or Twitter to recruit new members.

Forthcoming work from Morselli and Décary-Hétu reviews some of the papers on organized crime's use of social networking sites. Studies, such as Decker and Pyrooz's (2009) on the transmission of gang culture in Europe, have noted that the spread of criminal organizations across Europe has been partially due to the transmission of gang

culture through the Internet. The authors stress that popular hip-hop fashion and street gang lifestyle is also heavily diffused through television, movies, music, and video.

In many ways, the gang setting is highly individualized and studies that use network approaches have confirmed this to a considerable extent. One of the more notable research designs to include this approach was part of the Boston Gun Project, a problem-solving research initiative that was designed to confront increasing trends toward violence among youths in that city. Kennedy et al (1997) reported their results from field interviews and mapping exercises conducted with street gang experts among Boston police officers, probation officers, and street workers. The fieldwork was designed to represent the social network of alliances and conflicts between street gangs in Boston. The authors reported that the gang setting was not highly centralized, but those gangs found to be central within the network were the same as those referred to as the more troublesome gangs during interviews with law-enforcement officials.

More recently, Morselli (2009) analyzed interactions between gang and non-gang members in a drug distribution operation targeted by Montreal law-enforcement investigators and found that while gang members were present within the network, they were largely operating as autonomous individuals and were not the most pivotal participants in the network. That gang members are not directly central in gang settings is not a contradiction in itself. For example, Katz et al (2000) found that non-gang members are often central and important participants in settings initially believed to be structured around gangs. In many ways, such research confirms the experience of one of Klein's (1971) early interview respondents: "We got no leaders, man. Everybody's a leader and nobody can talk for nobody else" (p.96).

As for the online presence of gangs and criminal organizations, Womer and Bunker (2010) examined the extent to which the Internet has emerged as a key diffusion outlet for street gangs. They assessed the use of social networking sites by Mexican narcotics gangs by scanning these sites with a keyword search. Their analysis revealed that gangs related to the Sureños were using social networking sites to brag about their exploits and to broadcast images. Other gangs that were prominent in their search included the MS-13 and 18th Street. Sites dedicated to these gangs included images of members holding guns, showing hand signs, and flashing tattoos. As in the present study, Womer and Bunker (2010) also set out to verify if gangs were using these sites to recruit new members. They found that agencies such as the FBI interpreted the glorification of gangs on members' pages as a recruitment measure (p.85). However, they found no explicit evidence of any form of proactive recruitment strategy in their extensive keyword search.

Morselli and Décary-Héту (forthcoming) extended these findings by conducting a keyword search on a different set of criminal organization names in MySpace, Facebook, and Twitter. They found that gang presence on social networking sites is linked primarily to the promotion of a general gang or street culture through individual displays. In most cases, the sites were designed and managed by members and associates who emphasized their allegiance to well-known groups such as the MS-13, Crips, Bloods, or Latin Kings. These gangs were the most prominent entities across the social networking sites that they monitored. There were some exceptions, such as the Hells Angels, who were also very prominent but exist online as chapters or groups and not as specific members or individuals. Unlike the majority of groups monitored in this study, the Hells Angels did not display their criminal or violent exploits.

With regard to visitors of gang profile pages, there was no evidence of trickery or manipulation in any way. They did demonstrate their curiosity towards gangs and sometimes showed evident signs of support. According to Morselli and Décary-Hétu (forthcoming), street gangs are thus not proactively using the Internet to recruit anyone into a gang. Social networking sites are, however, creating a new venue in which people that share or are sensitive to the values underlying the street gang lifestyle can come together. These sites will have an impact on street gangs and other criminal organizations because they allow such groups to advertise their activities and diffuse their reputations through conventional outlets. More importantly, these sites create new settings that allow street gang members to interact with a wide number of people who would probably never have been exposed to their lifestyles and exploits through physical interactions. Thus, while recruitment is not taking place, social networking sites have made criminal groups a more accessible phenomenon for a larger portion of the population, increasing the number of favorable impressions that are transmitted about them.

New evidence has shown that criminal organizations such as the Mexican drug cartels are using social networking sites to modify the social environment in which they thrive (Sullivan & Bunker, 2011). Called *Narcocultura*, this process involves the “production of symbols, rituals and artifacts [...] that allow people involved in the drug trade to recognize themselves as part of a community, to establish a hierarchy in which [their] acts [...] acquire positive value” (Guillermoprieta, 2009). This propaganda is part of a much wider campaign by cartels to maintain their freedom of action that includes direct attacks on the government as well as the use of extreme violence for no apparent reason. *Narcocultura* increases the social legitimacy of cartels within the general population and among its members, and one of the way that *narcocultura* is achieved is through the use of social networking sites.

Social networking sites are also used to coordinate illegal activities and to threaten enemies (Kelley, 2009). Many Irish youth gangs use social networking sites not only to plan recreational riots and fights but also to recruit new members and bully others (Reilly, 2011). The use of Facebook and MySpace for such activities appears to be quite common—at least in Ireland -- a consequence of their wide adoption and ease of use. These results are based in part on other research on Irish youths (Centre For Young Men’s Studies, 2009), which found that social networking sites were also used to trick enemies into showing up at specific locations by faking seductive messages from girls. As well, images of criminal behavior are often broadcasted on online platforms such as YouTube and can then be shared on social networking sites.

Social networking sites have affected the justice system as a whole as well as criminals. There have been reports of police monitoring of such sites, although law-enforcement agencies have denied any extensive use of this technique (Reilly, 2011). Images found on Facebook or MySpace have been used in court to illustrate the character and remorsefulness of individuals after a crime. In a case reported by Weatherford (2011), a judge increased the sentence of a woman convicted of killing someone while driving under the influence because of online pictures showing her drinking excessively at parties.

Although scarce, the literature on social networking sites and criminal organization is growing steadily and points towards the increasing use of this tool by gangs, especially in the case of Mexican cartels. The following section explains how these findings can be explained theoretically.

Explaining the online behavior of criminal organizations in social networking sites

Wellman (2004; 2001) recognizes the community features of Internet interactions but stresses that this new communal frontier is largely governed by networked individualism: while individuals are increasingly coming together in Internet communities, the speed, ease, and relational transiency of such communications makes this an individualized phenomenon, one in which the individual (and not the group or network) is at the center of his or her own world.

While the individual takes center stage, Burt (2010) would add that the virtual world is subject to the same social processes that bring individuals together as the real world. But while people with similar tastes, attractions, and achievements may converge through virtual channels of communication, Burt also emphasizes that trust and reputation in the virtual world are radically distinct from real world experiences. In many ways, he argues, these familiar devices may disappear (p.11). What this suggests for gang presence on the Internet, and particularly on social networking sites, is that: (1) the presence of gang members in such an individualized setting suggests that interactions are probably occurring at the incentive of individual members and not as a collective objective of the gang itself, and (2) because trust and reputational features are weakened, it is unlikely that gang members are truly recruiting new members or co-offenders—it would seem that even gang members would be wary of such risks. What is more likely to be occurring is a process of social homogeneity in which people of similar tastes and lifestyles converge on a website that uses key signals as triggers. Gang members using such sites may be providing such signals and thus encouraging visitors to join the gang. Gambetta (2009) defines such signals as the “stuff of purposive communication” and “any observable features of an agent that are intentionally displayed for the purpose of altering the probability the receiver assigns to a certain state of affairs or event” (p.xv). The aim of this paper will be to determine how gangs use social networking sites for such purposes.

The present study is an extension of Morselli and Décary-Héту’s 2010 inquiry into this phenomenon and adjusts for new trends. Morselli and Décary-Héту (forthcoming) found that MySpace was the most important social networking site used by gang members but warned that this finding might be influenced by the fact that MySpace had been around for many years and thus had accumulated a greater amount of content. Given the sharp decline in the use of this website over the last year, a new survey was required to account for the rise of more popular sites.

New venues, such as Google+, are constantly entering the field as previous sites, such as MySpace, lose their popularity. Indeed, the portrait of social networking sites has changed considerably over the past two years. Facebook and other websites have added new features that increase the level of interaction between users, as well as modifying what is sharable on the sites. The social networks sites of 2011 share a common DNA with those of 2010 but have evolved into completely different organisms.

Such technical changes and shifts in the popularity of sites led us to question whether gang members are intentionally signaling to wannabes and potential recruits or whether they are simply expressing their freedom, as provocative as that may be. Morselli and Décary-Héту (forthcoming) followed Felson (2006), whose work on street gang signaling strategies found that many less well-known street gangs or criminal groups adopt the hand signs, colors, language, clothes, and even the name of a better-known gang in order to enhance their own image. Such mimicry is at the core of the many myths and stereotypes

that surround gangs and are propagated in media and law-enforcement circles. Thus, even in cases where the signaling strategy is intentional, it may well be that the gang behind the message is not established in any serious way. Given the large degree of ambiguity surrounding the precise reasons why street gangs and other types of criminal networks use social media, the rapid pace with which this particular social world changes means that regular investigation of such issues is necessary.

Data & Methodology

A systematic keyword search was devised for the empirical segment of this research. The search was restricted to active users on the two most popular (Kallas, 2012) social network sites: Facebook and Twitter. As Google+ has yet to establish itself as a dominant player, it was not included in this study. Morselli and Décary-Héту (forthcoming) have shown that criminal organizations are not early adopters of social networking sites and we thus assumed that their presence on Google+, only months after its inception, would be very difficult to detect.

Facebook and Twitter make it possible to search archived user data. Each site, however, varies in the level of privacy that it affords its users and in the amount of information that it provides. These two aspects must be taken into consideration when searching through the mass of information that was 'mined' for the present research. To create a list of keywords, we picked the names of the most popular criminal organizations detected by Morselli and Décary-Héту (forthcoming) as well as the ten most active gangs in the Montreal, Canada, area over the last few years according to a list provided by a research analyst at the Montreal Police Department. Using Morselli and Décary-Héту's (forthcoming) paper as a point of reference for the current study, we selected criminal organizations from the same geographic location. The keyword search included the following names: 14k Triad, 18th Street, Almighty Vice Lord Nation, Bad Boys, Big Circle Boys, Bloods, Bo-Gars, Crack Down Pussy, Crips, Hells Angels, Independent Soldiers, Indian Posse, Kraz Brizz, Latin Kings, Mad Kowz, Mara Salvatrucha, Mickey Cobras, MS-13, Natural Posse, Red Scorpions, Ruffriders, Shower Posse, Syndicate, United Nations, VVT, Wah Ching, Wo Shing Wo, and Young Master Crew.

When searching for gang names with multiple referents or that referred to entities beyond the street gang context (e.g., 18th Street), the scan was refined through additional queries using terms such as gang, drugs, violence, and crime. Since each social networking site has different features, search capabilities, and user interface, the methodology employed was different for each of the networks.

The reduced level of privacy at Facebook sites over recent years has led to a goldmine of information for researchers in that many groups, events, photos, and profiles meant to be private have now been made public without the owners' knowledge or consent. Our keyword search was conducted using Facebook's built-in powerful search engine. Since Facebook profiles are private by default, it would have been useless to index the individual profiles themselves. Instead, the Pages and Groups on Facebook were monitored. Pages are generally open profiles that are created to support an idea or an organization. People can then 'like' this page and link up accordingly. Groups are more content-heavy hubs where people can discuss various personal and social issues, create events, and share media. Users can become members and the creators of these Groups are listed on the page. Both Pages and Groups contain public messages, discussions, statements, pictures, videos, and events.

Twitter offered the most accessible data of all the websites. All the messages posted on the site are public and can be subjected to thorough searches. The site provides a clear and useful built-in search that offered access to all tweets posted over the past few months. The limit to the Twitter database is that these messages are restricted to such a small number of characters, thus providing very little information each time.

Results

Data collected on Facebook and Twitter is analyzed separately in this section. The discussion in the next section presents a unified analysis of our findings.

Table 1: Comparative analysis of organized crime presence on Facebook between 2010 and 2011 on Facebook

Name	Nb of Pages/Groups	Nb of fans/members (2010)	Nb of fan/members (2011)
Hells Angels	36	14,775	42,811
Crips	38	4,598	5,457
Bloods	39	1,993	3,497
Mara Salvatrucha (MS-13)	45	5,923	1,454
Latin Kings	31	1,255	1,003
18th Street	5	93	727
Almighty Vice Lord Nation	2	555	527
Indian Posse	4		426
Bad Boys	6	12	342
Wah Ching	3	6	100
14k Triad	2	121	92
Mickey Cobras	1	45	82
Shower Posse	3	297	53
Red Scorpions	3	6	33
Wo Shing Wo	1	5	22
Independent Soldiers	1		10
United Nations	1		4
Big Circle Boys	1		1
Mad Kowz	1		1

Table 1 presents the list of gangs with an online presence on Facebook. The second column indicates the number of Pages or Groups belonging to each gang. The third column displays the combined number of fans and members of groups as presented in Morselli and Décary-Héту's 2010 survey. The last column presents the combined number of fans and members found in the data collected in this study.

Our results indicate that the presence of gangs has increased since the last data collection a year and a half ago (19 vs. 18). Although minimal, this increase shows a trend

toward a growth in networking sites usage. The presence of each gang is also generally more important. Of the 28 groups considered, nine have increased their footprint on Facebook, five have maintained it, and five are slightly less visible. The increases of fans and/or members, however, are much bigger than the drops. The Hells Angels, Bloods, 18th Street, Indian Posse, Bad Boys and Wah Ching are the most popular groups on Facebook. Mara Salvatrucha and Shower Posse have lost a lot of supporters over the past year. In the case of Shower Posse, the authors had noted previously that an appearance on a popular TV show had greatly raised their public profile in 2010 and it is not surprising to see a drop in their online presence more than a year later.

The five groups that have known members across the world (Hells Angels, Crips, Bloods, Mara Salvatrucha, and the Latin Kings) tend to have more fans and/or members. Most of the other gangs have a very small footprint on Facebook, with less than 100 followers. This is also reflected in the number of Pages and Groups, where 14 out of the 19 gangs have 5 or fewer Pages and/or Groups dedicated to them.

A qualitative analysis of the content of these Pages and Groups shows that Wikipedia-style pages have all but disappeared from Facebook, which used to automatically generate Pages based on content extracted from Wikipedia. This artificially inflated the number of Pages as well as the content available on Facebook. With the increase in the quality and quantity of data submitted by Facebook users, these Pages are perhaps less necessary and have been progressively phased out. The descriptions on remaining Pages have also been abridged over the past year. Whereas many Pages and Groups once sported long descriptions of the origins and key events in the life of criminal organizations, most are now leaner, perhaps as a consequence of the increase in police monitoring on networking sites. As Facebook has become a reliable data provider for law-enforcement agencies, gangs who are looking to protect themselves may have removed any content that could help the police in their investigations. This includes information on the origins of the gangs, the name of its members, and its milestones.

Facebook itself has also been actively cleaning its own website over the past year. The structure of Groups and Pages has evolved, as mentioned before, forcing their administrators to manually confirm and transition their Pages from the old to the new models. All orphan Pages that had been created months or years ago and then abandoned by their creators have not made this jump and their content has been deleted from the social networking site. While the name of the Pages and Groups still show up in the Facebook search engine, they were not included in these results.

As information on gangs has changed, some new characteristics are now more prominent. First, online identities now include a much greater number of links leading to news reports in both text and video format. These include reports on the arrests of gang members as well as of their achievements. One Page even includes a security camera video showing a gun fight between members of different organizations. The profiles also display a much higher number of rap videos that praise the “gangster” way of life. Although not gang propaganda per se, these videos, where individuals display their gun, wealth, and prowess with women, suggest what awaits individuals should they decide to join. Some organizations are more open about their activities on Facebook, especially their racketeering activities. While there was little evidence of illegal behavior on Facebook a year ago, such new information indicates a growing trend and possibly a displacement of postings about such deeds from MySpace to Facebook. Finally, we were surprised to notice how many generic images were used to fill the Pages and Groups of gangs. Many

profiles used the same pictures, which seem to be taken directly from Google Images. This raises questions as to who is managing these Pages and the willingness of groups to showcase their members in such an open environment.

Interactions on Facebook have also evolved quickly over the last 18 months and its fans and members are now much more involved than they were just a short time ago. They have increased their level of interaction through activities such as posting messages, commenting, and liking. Flame wars, online and vicious retaliatory insults, have moved from their traditional stronghold on MySpace to Facebook. Many online Facebook profiles of gangs now include harsh conversations where individuals insult each other. These conversations can easily slip into threats, another characteristic that was limited to the MySpace crowd a year ago. 18th Street and a limited number of other gangs are also using Facebook to host promotional videos that foster discussion and possible recruitment of visitors. Such a public display was also unknown on this networking site not long ago. Finally, although they were not indexed in this study, many criminal organizations such as the Hells Angels now publicly announce meetings and parties on Facebook. Images are also posted after the events, giving researchers and law-enforcement agencies new insight into who is a member of such gangs as well how they behave during social gatherings.

Table 2: Online presence of criminal organizations on Twitter

Name	Nb of profiles	Nb of followers
Bloods	9	47,171
Hells Angels	24	13,411
Latin Kings	22	6,823
Crips	12	3,657
Mara Salvatrucha (MS-13)	21	3,303
Indian Posse	2	997
Almighty Vice Lord Nation	6	402
18th Street	1	205
Shower Posse	3	155
Wah Ching	1	32
Ruffriders	1	23

Table 2 displays the number of profiles as well as the number of followers of each gang on the social networking site Twitter. Eleven gangs were present in 2011 compared to eight in Morselli's and Décary-Hétu's (forthcoming) survey in 2010. There are some overlaps between Facebook and Twitter as Bloods, Hells Angels, Latin Kings, Crips, and Mara Salvatrucha were on both social networks. This suggests that these organizations are making a conscious effort to project their image on social networking sites or that such activity is encouraged by members of these gangs.

The number of followers on Twitter is very high, with hundreds, if not thousands, of followers for each organization. This highlights the influence and popularity of gangs among the general population and for a more limited subset of youth worldwide. The

number of profiles for each gang is fairly limited (under 12) except, once again, for major organizations such as the Hells Angels, the Latin Kings, and the Mara Salvatrucha.

Monitoring Twitter feeds has become much more difficult over the past few months as news organizations have adopted this platform. The signal to noise ratio has decreased sharply as many tweets now come from legitimate organizations who use this medium to publicize their most recent news article, as well as from individuals sharing such links with their followers. These news agencies usually have a strong base of followers and tend to be more visible than regular gang members.

Twitter profiles tend to promote a certain way of life rather promoting the criminal organizations themselves. Many users boast their access to money, women, guns, parties, drugs, and expensive alcohol. Some twitterers did promote their gang, either by praising the achievements of the gang or by declaring their allegiance to it. These messages were explicit and appeared in much greater numbers than a year ago. Users also displayed more sexual and criminal content on Twitter. Women were also involved in this promotional process with some, who appeared to be close to gang members (friends, girlfriends), also speaking up and openly displaying their allegiance, something not seen before.

As threats and insults have started to appear on Facebook, Twitter has also seen an increase in the amount of inappropriate behavior between users. Users now often insult each other publicly, going so far as to threaten each other. This could be a result of the higher involvement between users on Twitter— users are spending more time on the site and, as a result, are now at ease in the environment and have developed more intimate relationships with others who use it. Discussions tend to be more animated and information is broadcast more openly and rapidly.

Discussion

There is no doubt that the gangs monitored in this study have increased their presence on social networking sites Facebook and Twitter. Our results demonstrate that the number of Pages and profiles increased dramatically between 2010 and 2011. There has also been a shift in the quality and quantity of information openly available on these websites, with interactions and information much more graphic and violent than before. These environments have thus become more hostile for gang members as, with a greater number of individuals involved, it was to be expected that discussions would tend to be more volatile. Morselli and Décary-Hétu's (forthcoming) study shows that in 2010 MySpace was the main social networking site for information on illicit activities. With the adoption of Facebook and Twitter by MySpace users, some of the same behavior and symbols that were visible only on MySpace have now moved to other networks.

This study raises interesting questions as to the identity of the individuals who are behind the online identities of criminal organizations. The use of so much generic content in the profiles suggests that these individuals are, at best, vaguely connected to the organizations they claim to represent. Since they don't have access to original content, they are forced to repurpose other people's content in an effort to attract attention from real gang members. It could also be the case, on the other hand, that members are smart enough to realize that pictures of actual members would be of use to police agencies and other such organizations and that their use of generic content is a result of their desire to hide their true identity.

The shift in information available online also displays the difficulties that users face when dealing with information leaks on social networking sites. As mentioned before,

detailed information on gangs seems to have disappeared from profiles but group events and photos are now much more accessible. Increased protection of private information on Facebook in particular has raised many questions from regulating agencies and the fact that so much information is now available shows the problems involved in keeping information private as well as the lack of oversight from gangs on the data available about them online and who has the right to publish it.

Some gangs obviously want their information to be found online but achieving this is becoming more and more complex. Given the increasing number of users and companies now using social networking sites to broadcast information, finding a specific group or making sure a message gets heard is increasingly difficult. Our own monitoring of Twitter has shown how difficult it is to distinguish news broadcasts from more personal messages and gangs looking for fame through these websites will need to invest some time to understand their underlying mechanics. This increased difficulty could help offset the potential gains that gangs were hoping to achieve through the use of social networking sites.

Even though the profile of criminal organizations on Facebook and Twitter has changed over the past year, the focus of our inquiry has not changed. Individuals commenting on profiles and groups always spoke for themselves, not for the gang. Personal relationships seemed to motivate all of the interactions online and the presence of flame wars highlights the high level of personal tension that can exist between individuals. Although more established gangs, such as the Hells Angels, do present an official front, even their interactions occur at a more personal level and discussions tend to concentrate on what individuals have done rather than on the organization itself.

On the recruitment end, there appears to have been a slight shift in the use of social networking sites. Organizations posted more promotional videos on Facebook and Twitter and the advantages of being a member of a gang were featured more prominently. This could have the effect of raising interest in gang membership among a certain population who emulate the behavior of gang members as a way to achieve a certain level of notoriety and/or status.

Conclusion

It is difficult to monitor platforms as big and complex as Twitter and Facebook. This study used the built-in search engines of the social networking sites to gather information but these search engines have inherent limits. For example, Twitter's own online search returns the results for only the last three days. Any tweet older than that will show up in the user's feed but will not be indexed by the search engine. This limits the pool of data that can be monitored and limits the validity of the results presented in research such as ours.

We also mentioned that there often was a high signal to noise ratio in social network searches. Separating real gang members from established or rogue journalists is not a simple task and tools will need to be developed to discriminate corporate tweets from personal tweets. Integrated tools are also needed in order to seamlessly and reliably translate tweets in foreign languages. Given the international nature of many criminal organizations, many search results hits were in Spanish, for example, and this hampered the data collection process.

While such limits remain important obstacles, this study has nevertheless managed to present a more up-to-date picture of the presence of gangs on social networking sites. It

differs in many points from previous studies, including that of Morselli and Décary-Héту (forthcoming), which used a similar methodology just over a year ago. This raises the question as to whether this type of research should be done annually in order to understand the emergence of gangs in this new social world. Given the rapidity with which social networking sites are growing and changing, the picture of organized crime found in these websites is bound to change on a yearly basis.

As the behavior of gang members and criminals changes over time in the virtual world, it would be interesting to compare this evolution to its counterpart in the real world. Future research could identify whether trends in real life translate into the virtual world or if, inversely, trends in the virtual world could be used as an early warning signs. By monitoring the level of communications or the number of flame wars on social networking sites, it might be possible to predict where the next violent incident will happen and who is likely to be involved. This would thus be the next step in intelligence gathering on criminal organizations.

Finally, the methodology used in this paper focused on keyword searches to detect criminal organizations. It would be interesting to investigate the usefulness of using the social graphs (the contacts) of known criminal organizations to monitor their members and their evolution in time. Keyword-based research could identify the most visible players in criminal organizations. The contacts of these individuals could then be monitored to identify friends and business relations undetected during the initial phase of the research. Facebook and Twitter provide automated tools to collect data on such social networks and this methodology should certainly be considered as the next step in monitoring organized crime in social networking sites. This would allow us to really take advantage of the latest developments of social networking sites and turn their features against the users who seem to find them so helpful.

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