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### THEMENSCHWERPUNKT

## Leveraging the Voices of Social Media for Peace and Security

Rebecca K. LeFebvre

**Abstract**: Social media have the power to unite people in common causes. At the same time, social media can highlight divides among people and influence conflict. This paper explores the latest techniques being used to mine social media data to discover trends in public discontent, terrorist messaging, and conflict prevention. Techniques being used to explore social networking on the Dark Web are also discussed. The field of conflict management needs more of such innovation for tapping into the voices of social media. The conversation is too often one-directional, missing out on opportunities to use the strengths of social media to reach more people, hear more voices, and build lasting peace through meaningful dialog.

**Keywords**: social media, data mining, Dark Web, conflict prevention Schlagworte: Soziale Medien, Datengewinnung, Dark Web, Konfliktprävention

#### 1. Introduction

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ith the continued expansion of the global internet, participation in social media has climbed at an impressive rate. Throughout the world, more than half of the adult population who are on the internet use social media applications such as Facebook, Twitter, YouTube, Vkontakte, QZone, and QQ.<sup>1</sup> If we consider the entire adult population on the planet, including those with no internet access, we still see

"Global Attitudes & Trends," Pew Research Center, February, accessed June 6, 2016, http://www.pewglobal.org/2016/02/22/social-networking-verypopular-among-adult-internet-users-in-emerging-and-developing-nations/.

an impressive 30% of adults worldwide on social media.<sup>2</sup> Social media have the power to connect people across the globe and unite people in common causes. Although social media are often used for keeping in touch with friends, it is becoming increasingly common for people to use social media to get news and stay informed. Some social media applications, such as Twitter, are particularly good at providing as-it-happens coverage and commentary on live events.<sup>3</sup>

<sup>&</sup>quot;Number of Social Network Users Worldwide from 2010 to 2019," Statista, accessed April 11, 2016, http://www.statista.com/statistics/278414/ number-of-worldwide-social-network-users/.

<sup>&</sup>quot;The Evolving Role of News on Twitter and Facebook," Pew Research Center, last modified July 14, 2015, http://www.journalism. org/2015/07/14/the-evolving-role-of-news-on-twitter-and-facebook/.

While social media are usually regarded as a means for positive communication and information flow, they can also highlight divides among people and be instrumental in escalating conflict. Cyber criminals have become adept at using social media to hack accounts, blackmail users, and perform social engineering to support larger criminal enterprises. The terror group Islamic State (IS) has become known for its use of social media, particularly high-quality YouTube videos, for spreading its propaganda and recruiting new followers and supporters.4 The power of social media has even made its way over to the Dark Web, a portion of the World Wide Web not accessible from standard web browsers where anonymity reigns and criminal and terrorist activity are often conducted.

When studying social interactions and communication between people in the 21st century, it is essential to include the digital component. This paper explores the latest methods and techniques being used to mine social media data to discover trends in public discontent, terrorist messaging, and conflict prevention. Examples are provided of cases where social media have been used effectively in efforts to prevent, resolve, and transform conflict. I also discuss techniques being used to explore social networking on the Dark Web. The world needs more innovation on tapping into the voices of social media. The conversation is too often one-directional with people shouting out their message into the social media space without being heard or understood. We may be missing out on opportunities to fully use the strengths of social media to reach more of the population, hear more voices, and build lasting peace through meaningful dialog.

#### 2. Revolution and Protest Movements

Revolution in the age of social media has taken on a different appearance. The social web and mobile phones have changed the nature of protest organization and the expression of grievance. Largely, social media has accelerated the pace at which protests develop, and it has empowered citizens in new ways. For example, consider the "Occupy Wall Street" movement of 2011, where people brought tents to occupy a park in New York City for months in protest of social and economic inequality. The movement began with a tweet - "Dear Americans, this July 4th, dream of insurrection against corporate rule" – and a hashtag, #occupywallstreet. The occupation of the city park was encouraged by a blog, and throughout its duration had no charismatic leader or individual organizer. As the #occupy phenomenon spread to other cities, social media continued to play a significant role in spreading the word and organizing activities. In total, there were 1.82 million #occupy tweets sent over the course of a year.<sup>5</sup>

Other examples of protest movements enabled by social media include the 2012 Idle No More campaign, the 2011 Los Indignados campaign, and of course the Arab Spring which began in 2010. Idle No More was started by four women on Facebook to fight for indigenous rights in Canada and became

"Islamic State: The Propaganda War," *The Economist*, August 15, 2015. Michael D. Conover et al., "The Digital Evolution of Occupy Wall Street," PLOS ONE 8 (2013), accessed at http://dx.doi.org/10.1371/ journal.pone.0064679.

a global movement within two months. 6 Spain's anti-austerity movement, known as Los Indignados, mobilized their efforts through Facebook and Twitter. The sit-ins and demonstrations of the movement are considered by many to be the inspiration for the Occupy movements that came later in the year. Finally, the Arab Spring was sparked by the protest suicide of Mohamed Bouazizi, a street vendor in Tunisia. Early protests in response to Bouazizi's self-immolation were recorded on mobile phones, posted on the internet, shared on Facebook, and spread across the Arab world.<sup>8</sup> The Tunisian revolution inspired action in Egypt as well. In Egypt, Wael Ghonim founded a Facebook page titled, "We Are All Khaled Said," supporting Khaled Said, a young Egyptian who was tortured to death by police in Alexandria. Ghonim, and others used Facebook to motivate and integrate the anti-government protests of the 25th of January revolution. Protests and revolution spread further into Libya, Yemen, and Syria, although with very different results.

The Arab Spring has been studied extensively to understand the role of tweets, blogs, texts, and Facebook posts in protests and revolution. One study from the University of Washington analyzed more than 3 million tweets, gigabytes of YouTube content, and thousands of blog posts related to the Arab Spring.<sup>9</sup> They concluded that social media carried a message about freedom and democracy across North Africa and the Middle East, raising the hopes and expectations of the people that revolution could be successful. But do social media actually cause revolution? Despite the initial fervor around the idea of social media causing revolution in the Arab Spring, many scholars now acknowledge that social media do not cause protest and revolution. Claims of a causal role for new media in revolution are generally unsupported by the data. 10 Even Wael Ghonim has argued, "This is not an Internet Revolution. It would have happened anyway."11 Giving names to surges in social media activity, such as Occupy, Idle No More, Los Indignados, and the Arab Spring does not necessarily indicate the emergence of a new resistance movement among the general population so much as a representation of ongoing discontent that is being reinvigorated by the latest available technology.

Social media may be a good tool in disrupting regimes, but long-term change is still elusive with this approach. When protesters use social media platforms, they can scale up very quickly. However, that means they do not develop the capacities that come with years of preparation and sustained periods of working together. Successful movements for social and political change, such as the civil rights movements in the United States, develop collective capacity in organizing, decision-making, and

Candice Bernd, "Idle No More: From Grassroots to Global Movement." Truthout, January 29, 2013, http://www.truth-out.org/news/item/14165idle-no-more-from-grassroots-to-global-movement .

<sup>&</sup>quot;Spain's Indignados Protest Here to Stay," BBC News, May 15, 2012, accessed at http://www.bbc.com/news/world-europe-18070246 . Robert Mackey, "Video That Set Off Tunisia's Uprising," *New York Times*,

Robert Mackey, "V January 22, 2011.

Catherine O'Donnell, "New Study Quantifies Use of Social Media in Arab Spring", University of Washington News Release, September 12, 2011, accessed at http://www.washington.edu/news/2011/09/12/new-study-

quantifies-use-of-social-media-in-arab-spring/.

Zeynep Tufekci, "Social Movements and Governments in the Digital Age: Evaluating a Complex Landscape," Journal of International Affairs, 68(2014)

<sup>&</sup>quot;Charlie Rose Talks to Wael Ghonim," Bloomberg Business, February 15, 2012, available at http://www.bloomberg.com/bw/articles/2012-02-16/ charlie-rose-talks-to-wael-ghonim.

work dynamics. 12 These capabilities are not typical of protest movements founded through social media. The "occupy" protesters lacked specific goals, and most eventually packed up their tents and went home without plans for future involvement. Highly vocal participants in the movement's early days lost interest, at least in the social media aspect, and the once popular channels on Twitter were nearly completely abandoned. 13 The Arab Spring has had success with democracy prevailing in Tunisia, but disappointments everywhere else, including collapsed states in Libya, Syria and Yemen; the return of military rule in Egypt; and the rise of the Islamic State in Syria and Iraq.

Despite the limited long-term impact of social media, these digital connective platforms must be factored in when discussing how citizens express discontent with existing power structures and citizen-state relations. Social media have a role to play in protest and revolution bringing advantages for capturing public attention, evading censorship, and aiding in coordination of event logistics. Social media can also act a bridging function from an activist core to the mass public. The bridging function is most useful in regions where the government controls or censors traditional media and regions where violent conflict prevents traditional news outlets from having access. 14 For example, in Tunisia, the government had tight control over traditional media including newspapers and television making social media the primary source for information on protests and resistance. In Syria, extreme violence has often made information scarce through traditional sources, whereas intelligence information is more readily gathered by combing through social media, especially videos.

In some cases, social media can be viewed as a "megaphone", in essence broadcasting the message from the core activists to the mass public and importantly to a global audience. The audience outside the region of protest can often be instrumental in putting pressure on governments and regimes to make change. This concept is similar to the theory of mass communication called "agenda setting" in which mass media sets the topic for discussion.<sup>15</sup> The more frequently mass media cover a particular subject, the more importance audiences attach to the subject. Mass media are not expected to tell us what to think, but they are stunningly successful in telling us what to think about. Social media often reflect this same concept of agenda setting. Successful core activists are able to get their message broadcast through the "megaphone" to a broad audience, setting the agenda for discussion by enabling large-scale retweets, likes, favorites, and video views. Studies on social media content often align with this notion. One study of 1.2 billion tweets over a two-month period showed that 71% of tweets received no response at all - no retweets and no replies, and only 6% of tweets got retweeted. 16 This low level of engagement suggests that an overwhelming amount of Twitter activity goes unnoticed.

The large-scale retweeting of Twitter messages that occur during "Twitter storms" of particular hashtags is relatively rare. Yet, those rare occurrences are powerful examples of users who have successfully grabbed the "megaphone" to spread their message.

#### 3. Terrorism and the Dark Web

The power of social media is available to malevolent as well as benevolent groups. Terrorist organizations have become alarmingly adept at using social media to magnify their message of fear and violence. Terrorist organizations have successfully broadcast videos of the executions of aid workers, journalists, soldiers, and others on YouTube in horrifyingly imaginative ways. The Islamic State (IS) has used social media not only to incite fear but also to generate propaganda about their group to draw in new recruits and supporters. They have used videos, smartphone apps, an online magazine, and video games to portray themselves as avengers and promote their slogan to remain and expand. Their propaganda has been remarkably successful bringing in new recruits from at least 86 countries and doubling the cumulative number of foreign recruits between 2014 and 2015 to approximately thirty thousand people.<sup>17</sup>

Western governments have urged large social media corporations to help in counteracting the terrorist threat online by restricting accounts and removing messages. Twitter has responded by shutting down thousands of accounts suspected of being associated with IS.18 YouTube takes down the videos with horrific violence more quickly than they used to. Facebook recently increased its efforts to counter terrorism by policing content and quickly removing accounts of users who support terrorists. Facebook has gone a step further and now promotes "counter speech" which is content that attempts to discredit terrorist organizations such as IS. For example, Facebook offered ad credits of up to \$1,000 to certain counter speakers such as a comedian in Belgium. Facebook also partnered with the U.S. Stated Department to run a competition for college students. Classes from 45 colleges around the world were given a \$2,000 budget and \$200 in ad credits to create messages that counter extremism. 19 All of this does seem to be having an impact as demonstrated by the response of IS. With their social media accounts being shut down and their messaging being actively countered, IS has become less effective on the World Wide Web. After the Paris attacks in November of 2015, IS announced that it would move its propaganda efforts over to the Dark Web.

The Dark Web is part of the internet that is not reachable by traditional web browsers and thus not visible for most users. The Dark Web is a small portion of what is known as the Deep Web. In his influential study, Michael Bergman likened the Deep Web to fishing in the ocean.<sup>20</sup> Traditional search engines simply drag their nets across the surface of the water. They can capture a wealth of information in their nets, yet they miss a

<sup>12</sup> Zeynep Tufekci, "Social Movements and Governments in the Digital Age: Evaluating a Complex Landscape," Journal of International Affairs,

Conover, "The Digital Evolution of Occupy Wall Street"

<sup>&</sup>quot;New Media and Conflict After the Arab Spring," United States Institute of Peace, 2012.

Maxwell E. McCombs and Donald L. Shaw, "The Agenda-Setting Function of Mass Media," *Public Opinion Quarterly*, 36 (1972). "Replies and Retweets on Twitter," *Sysomos*, last modified September

<sup>2010,</sup> http://sysomos.com/inside-twitter/twitter-retweet-stats.

<sup>&</sup>quot;Islamic State: Unfriended," *The Economist*, December 12, 2015. "Islamic State: Unfriended"

Natalie Andrews and Deepa Seetharaman, "Facebook Adds New Tool to Fight Terror: Counter Speech", The Wall Street Journal, February 11,

<sup>20</sup> Michael K. Bergman, "The Deep Web: Surfacing Hidden Value," Journal of Electronic Publishing, (2001).

whole lot of information that lies deeper. In fact, Bergman's study estimated that the Deep Web is 500 times larger than the Surface Web. The Dark Web is a portion of that Deep Web that has been intentionally hidden and can only be accessed with a special web browser. The Dark Web has come to be known as a space for taboo and illegal activities such as drug sales, child pornography, murder for hire, and terrorist planning. Yet even in this space, social media has emerged including the ability for liking, friending, blogging, and persona-building. The activities on the Dark Web are expected to be anonymous, but the messaging that flows is still powerful in influencing others.

In order to gain a better understanding of terrorist ideologies, strategies, and activities, researchers have taken to searching the Dark Web. For example, Chen et al. (2008) developed an advanced methodology for collecting and analyzing Dark Web information.<sup>21</sup> Their method used a combination of web mining, content analysis, and visualization techniques to identify terrorist clusters and analyze terrorist use of the Dark Web. The University of Arizona Artificial Intelligence Lab runs a long-term research project gathering data on terrorism in cyberspace through its Dark Web Project. Previously, it had been estimated that there were about 5,000 terrorist web sites, but the Dark Web Project uncovered an estimated 100,000 web sites with extremist or terrorist content as of 2010 which included web sites, forums, blogs, social networking sites, video sites, and virtual world sites.22

Gehl (2014) took an ethnographic approach to exploring the Dark Web social network and discovered that it was used not only for taboo activities but also as a means of free speech.<sup>23</sup> Gehl joined the Dark Web Social Network site using The Onion Router (Tor) web browser and acted as a participant observer for a period of 10 months. The ethnographic approach he used was challenging, because he could not link a user's on-line persona to his or her real-world counterpart, and therefore he could not talk to users offline or get their personal information. However, he was able to observe uses of the Dark Web that were not strictly for terrorist or criminal activity. Some people used the anonymity of the Dark Web to have conversations free from the oppression of governments, organizations, or other individuals. Journalists, activists, and whistleblowers use the Dark Web to speak freely without worry of being detected. There are reports of Tor being a valuable tool for revolutionaries during the Arab Spring.<sup>24</sup> There are even cases where the Dark Web can help victims. Tor's executive director has been working with victims of domestic abuse who need to communicate anonymously to avoid detection by their abusers.<sup>25</sup>

#### 4. Conflict Resolution

If the Dark Web can be used as a tool to help victims of conflict, how much more can the rest of the internet do? There are many ways that social media can act as a tool in conflict resolution, de-escalation, and long-term peacebuilding. One example comes from an open source software application that originated in Nairobi, Kenya during the violence that followed the disputed 2007 presidential election. The application is called Ushahidi, the Swahili word for "testimony", and is based on crowdsourced reports of violence or potential for violence.<sup>26</sup> During the postelection violence of 2007 and 2008 in Kenya, eyewitnesses from around the country began to send messages in email and texts about riots and unrest that were happening around them. A few bloggers came together and built a blog aggregator to combine the posted messages onto a map to help identify the hot spots. This aggregator became the product Ushahidi, which has evolved into a platform that anyone can use to crowdsource crisis information whether for disaster relief or prevention of riots. While Ushahidi is primarily about a one-way flow of information into an aggregator, there are other examples that make use of two-way dialog online to help prevent conflict from escalating monitor conflict and attempt to prevent escalation.<sup>27</sup>

Dialog through social media is not naturally a conflict prevention tool. Too often the conversations on social media are polarizing. The Pew Research Center analyzed thousands of social networks produced by topics on Twitter and categorized the topologies into six types.<sup>28</sup> They found that the most common topology when discussing political topics was the "polarized crowd" network structure. In this structure Twitter users naturally form into two dense groups that communicate heavily within the group but very little between the groups. These groups are not arguing or debating, they are simply ignoring the opposing view and sticking with people who think just like themselves. For social media to be helpful as a conflict prevention tool, there is a need to get opposing parties to come together and have a two-way dialog online.

One such example is Salam Shabab, a reality television show and associated online community for Iraqi youth.<sup>29</sup> On the television show, Iraqi youth from different parts of the country come together to compete for the title of national champions, known as the "Ambassadors of Peace." Online, Iraqi teens can connect with other youth in Iraq and throughout the world as members of the Salam Shabab social network community. The inter-ethnic dialog allows young people to express who they are and say what they think about building peace in Iraq. Salam Shabab is a way for the next generation of Iraqi leaders to have their voices heard.

<sup>21</sup> Hsinchun Chen et al., "Uncovering the Dark Web: A Case Study of Jihad on the Web," Journal of the American Society for Information Science and Technology, 59(2008).

Hsinchun Chen, Dark Web: Exploring and Data Mining the Dark Side of

the Web (Springer Science & Business Media, 2011). Robert W. Gehl, "Power/Freedom on the Dark Web: A Digital Ethnography of the Dark Web Social Network," New Media & Society

<sup>&</sup>quot;Going Dark: The Internet Behind the Internet," National Public Radio, last modified May 25, 2015, http://www.npr.org/sections/alltechconsidered/2014/05/25/315821415/going-dark-the-internetbehind-the-internet.

<sup>&</sup>quot;Going Dark: The Internet Behind the Internet," National Public Radio, last modified May 25, 2015, http://www.npr.org/sections/ alltechconsidered/2014/05/25/315821415/going-dark-the-internetbehind-the-internet.

Joseph G. Bock, The Technology of Nonviolence: Social Media and Violence Prevention (Cambridge, MA: MIT Press, 2012).

An example of a two-way dialog online is Salam Shabab. "Salam Shabab: Views and Voices of Iraqi Youth," *United States Institute of Peace*, last modified January 19, 2011, https://www.usip.org/publications/salamshabab-views-and-voices-of-iraqi-youth.

Marc A. Smith et al., "Mapping Twitter Topic Networks: From Polarized Crowds to Community Clusters", Pew Research Center, last modified February 20, 2014, http://www.pewinternet.org/2014/02/20/mapping-

twitter-topic-networks-from-polarized-crowds-to-community-clusters/. "Salam Shabab: Views and Voices of Iraqi Youth," *United States Institute of Peace*, last modified January 19, 2011, https://www.usip. org/publications/salam-shabab-views-and-voices-of-iraqi-youth.

The United States Institute of Peace (USIP) created an initiative called "Blogs and Bullets" that explores ways to map online dialog in priority conflict areas.<sup>30</sup> They performed an empirical study of social media dialog about the Syrian Civil War involving 38 million tweets in English and Arabic over 28 months. They too found a "polarized crowd" network structure in the Twitter conversations. The English language Twitter crowd became increasingly isolated from the Arabic Twitter crowd with their own topics, imagery, and themes. This created a distorted view for most English users of the more general Arabic discourse. The social media network pattern showed clear clusters of like-minded thinking that became more and more insular over time. The study encourages further refinement of methods that involve social media data. Findings need to go beyond descriptive analytics and examine causal links between behavior, attitudes, or political outcomes as reflected in social media.

How can we use the descriptive analytics that we have today to create actionable results? One answer has come from the Carter Center in their Syria Conflict Mapping Project.<sup>31</sup> Since 2012, the project has been working to analyze open source information and social media content to create a representation of the current state of the conflict in Syria. By combing through YouTube videos, blogs, social media postings, and other publicly available sources, they have worked to estimate the changing relations between armed groups, monitor the flow of weapons, and predict the movement of internally displaced people. The data collection process is labor intensive, as a team of researchers uses standard searches of social media sites and has every piece of information in their system viewed and recorded by a human analyst.<sup>32</sup> The analysis of their data is more automated and enabled by network visualization software and advanced mapping tools, such as Palantir. The results are shared with the United Nations and other humanitarian groups to help inform their efforts at mediation and delivering aid. Most recently, the project gave public access to a dynamic dashboard that shows the ebb and flow of territorial control in the region. The dashboard, based on publicly available information only, is not deemed of military value, but it is valuable as a tool to increase public awareness of the conflict.

#### 5. Conclusion

There are massive amounts of information that are available on social media due to the high level of participation across the world and the popularity of many of the applications like Twitter and Facebook. If we can decipher what people are saying, we can implement better early warning systems, be better prepared to respond to the dangers of terrorism, and address legitimate grievances before they escalate into violence. This paper has summarized some of the varied and innovative approaches currently being used by both researchers and activists to leverage the content and power of social media.

Researchers have made use of both quantitative and qualitative methods for data collection and analysis of social media. Ethnography has been successfully used to further our understanding of social media on the Dark Web. Data mining and content analysis have clarified the role of social media in revolution, revealed trends in protest engagement, and uncovered patterns of terrorist use of the web. Network analysis and visualization techniques have uncovered clusters of online terrorist activity and patterns of polarized online dialog. These studies have made powerful contributions to our ability to leverage the voices of social media on the internet. We need more of these empirical studies and fewer anecdotal reports on how social media is used.

Activists have made use of a variety of techniques involving social media to promote their causes. Protestors have been effective at using social media to capture attention for their cause, communicate event logistics, and in some parts of the world evade censorship of the authorities. Malevolent activists, such as terrorists, have unfortunately been able to use social media effectively for their own causes. Terrorists have learned to use social media successfully for propaganda, recruitment, and planning. At the same time, counterterrorism approaches through social media have also been developed, such as the "counter speech" being promoted by Facebook. Finally, activists promoting conflict prevention and peacebuliding have developed methods that use social media such as crowdsourcing conflict data (also known as "activist mapping"), conflict mapping data found in social media, and promoting inter-ethnic dialog online.

The successes in mining, analyzing, and applying social media for the promotion of peace and security have been impressive so far, but there is more to be done. The conversations in social media are too often one-directional. We need to continue finding ways to mine deeper and filter through an ever-growing mountain of information. There is also opportunity to combine some of the methods described here. For example, online early warning systems (like Ushahidi) could detect where there is openness to two-way dialog and encourage it (like Salam Shabab). Data mining and content analysis tools could discover where the hard-liners are (perhaps on the Dark Web) and work to counteract their message (like Facebook's counter speech). We should work to fully use the strengths of social media to reach more of the population, hear more voices, and encourage dialog. Tapping into social media effectively can aid in understanding the issues that escalate conflict, identifying the early warning signs of potentially destructive or violent conflict, and building lasting peace through meaningful dialog.



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<sup>30</sup> Marc Lynch, Deen Freelon, and Sean Aday, "Syria's Socially Mediated Civil War," United States Institute of Peace, last modified January 13, 2014, http://www.usip.org/publications/syria-s-socially-mediated-civil-war.

<sup>&</sup>quot;Carter Center Makes Dynamic Syria Conflict Map Available to the Public", *The Carter Center*, last modified March 9, 2016, http://www.

cartercenter.org/news/pr/syria-030916.html.

32 Federico Guerrini, "How Researchers Use Social Media To Map The Conflict In Syria", Forbes, April 15, 2014, http://www.forbes.com/sites/federicoguerrini/2014/04/15/how-researchers-use-social-media-to-maparmed-forces-in-syria/#2343febf2e50.