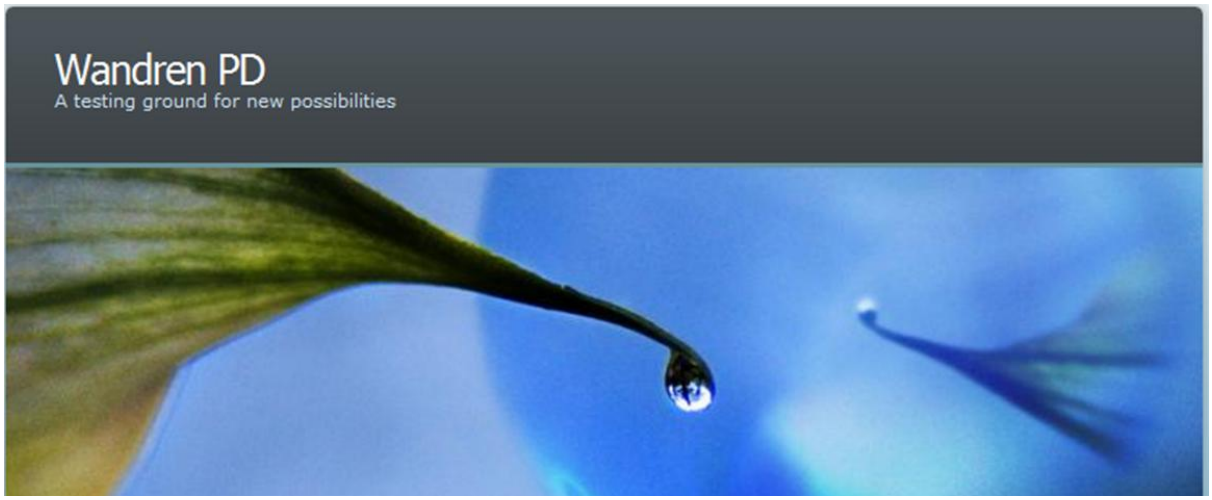

BULLETS WITH BUTTERFLY WINGS; TWEETS, PROTEST NETWORKS AND THE IRANIAN ELECTION

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Abstract

Following the election in Iran, *Twitter* was used as a means for expression for both individuals in Iran and networks observing the events from around the world. This spawned many articles the '*Twitter* Revolution' or proclaiming *Twitter*, "the Medium of the Movement" (Grossman, 2009) but what was the reality behind the hyperbole?

This essay presents analysis based on network mapping to visualise the interactions which occurred between the members of networks using *Twitter*. Network analysis, contextualised by concepts of Netwar (Arquilla & Ronfeldt, 1996) with previous analysis of network based protest, demonstrate interaction was predominantly characterised by a series of local conversations rather than a one global debate. On this basis the conclusion considers implications for both protestor and state of operating in an environment where high volumes of data have the potential to hamper coordination and limit coherent interaction with a wider audience.

Keywords: Social media, network mapping, netwar, protest movement, Infosphere

Bullets with Butterfly Wings; tweets, protest networks and the Iranian Election

The student protests in Iran during July 1999 came a few months before the street battles outside the WTO Ministerial Conference held in Seattle. The notorious and violent encounters between protesters and police became known as '*N30*' or the '*Battle in Seattle*'. Despite the use of tear gas and pepper spray, followed later by concussion grenades and rubber bullets the protestors managed to defy the police and block streets thereby limiting access to the WTO conference for 3 days. This resistance relied on a variety of communication devices which allowed the protesters to coordinate at street level and communicate with a national and even international audience. In 1999 the *N30* protesters were more successful than their Iranian contemporaries in using digital communications for these purposes. As Paul de Armond (2001) recalled that at *N30,* "floating above the tear gas was a pulsing infosphere of enourmous bandwidth, reaching around the planet via the internet" (p. 210).

While the context following the election in Iran is not fully analogous to 1999, protesters in 2009 have been much more successful in engaging with the infosphere metaphorically floating above the streets. *Twitter* provided a relatively easy, yet powerful means of passing information while maintaining degrees of anonymity. The ability to combine credibility and anonymity was important as this struggle played out over months rather than 3 days.

Recognising the dispersed response to the Iranian election through *Twitter*

Since last June's election in Iran, updates of developments whether news, rumour or speculation along with detailed analysis have appeared via *Twitter* from a large number of citizen journalists. This appeared alongside attempts to coordinate protests and messages of support. As Neri Zilber (2009) reported, "With the inevitable

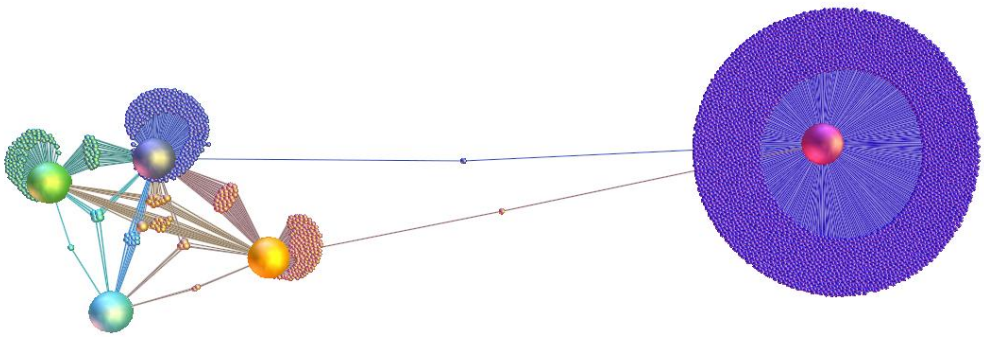
regime crackdown on the international press, the place of traditional print and television reporting has shifted overwhelmingly to new media platforms such as YouTube, *Twitter*, Facebook and other similar peer-to-peer social networking sites".

Social media played an important role as western news media were struggling to keep pace with events or were criticized for the slow speed with which particularly cable news began to cover the protests. As Brian Stelter (2009) reported, "untold thousands used the label "#CNNfail" on *Twitter* to vent their frustrations" about CNN's failure to cover events as some viewers had expected. Ultimately as Neri Zilber (2009) wrote "While some restraint is warranted before proclaiming this the "*Twitter* revolution", what should be obvious is that the only reason we're able to see, hear, read – and yes, argue – about what's been unfolding in Iran is due almost entirely to new media technologies".

Highlighting this perspective, the Web Ecology Project produced *The Iranian Election on Twitter; The First Eighteen Days*, (2009) which studied the over two million tweets about "Iran". Smaller analysis was offered by Nicholas Thompson (2009) in his article; *Iran: Before You Have That Twitter-Gasm…* which focused on the languages and location details of individuals using *Twitter*. Further complexity comes from those outside Iran changing the location on their *Twitter* profiles to Tehran or time zone to +3:30 in an attempt to create cover for those tweeting in Iran. Whatever the relative merits of flooding the infosphere to make it harder for state representatives to tell who was actually in the region, those that only changed location were largely transparent as their time zone shown in any download of user details pretty much gave the game away. Ironically, however successful these individuals were at providing cover, they were equally successful at making it harder for those taking their first steps in seeking to interact with protesters to locate them.

Mapping the Iranian context

Recent studies published in First Monday (Huberman, Romero, & Fang, 2009) or conducted at Harvard Business School (Heil & Piskorski, 2009) have demonstrated the power of network mapping. In the context of the Iranian election, mapping can be applied to show the interaction between groups of protesters, observers, analysts and supporters. Producing network mapping based on the #tags adopted by *Twitter* users highlights the groups with which that user chose to identify. This approach focuses on the behaviour of users rather than sampling the data or a researcher categorising tweets after the fact.

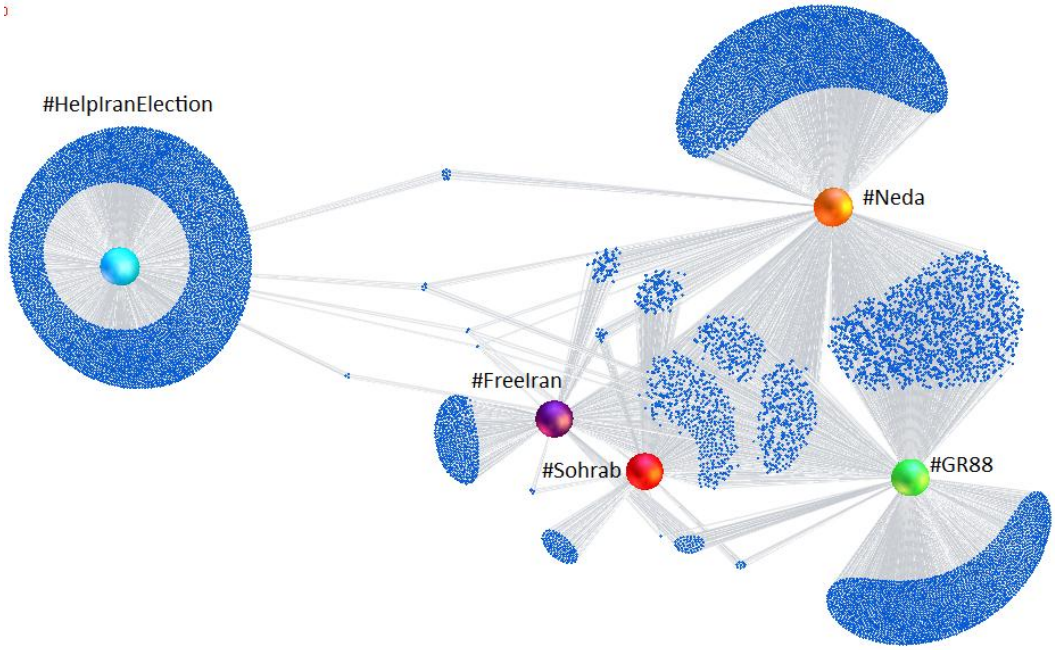


This image shows that in the weeks after the election two separate conversations existed in almost total isolation; the conversation between users of the four #tags represented by the spheres on the left and the second interaction between users of the single #tag on the right. The interlinked set of four spheres on the left represent the tags #GR88, #FreeIran, #Neda, and #Sohrab. The large sphere on the right represents #HelpIranElection. #Neda took the name of Neda Agha-Soltan / Neda Soltani shot and killed on 20th June (Stoltz, 2009). Likewise #Sohrab takes the name of Sohrab Arabi who went missing after joining the protests; his body was returned to his family weeks later. These tags were often used as symbols of solidarity

and resistance. #GR88 was abbreviated from Green Revolution 1388 and often functioned as a coordination point for networks of activists. The left hand conversation focused on, for example, coordinating forthcoming protests including suggesting using cars to block streets as a way of protecting the protesters and using shortened URL to share stories or video. The users of these tags can be thought of, broadly, as 'insiders'. This insider group is a diverse combination of individuals who may be; protestors physically located in Iran, physically outside Iran but with strong links to individuals in Iran, Iranian Diaspora, analysts and commentators.

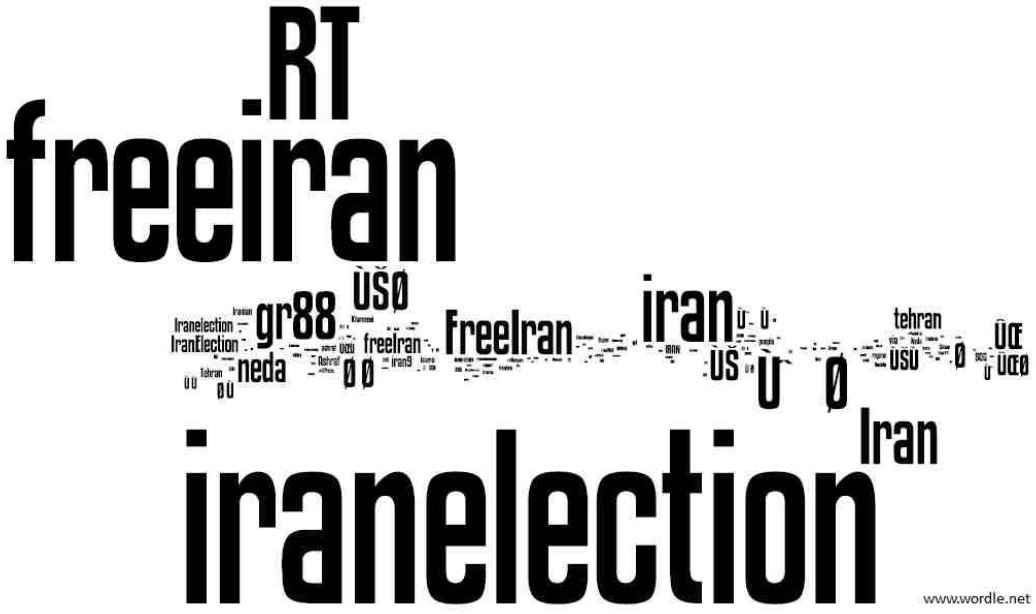
A common thread in the early tweets from this insider group was the desire to get stories then on niche local websites or uploaded onto Youtube to the attention of international broadcasters or a loosely defined western audience. This was particularly successful when the video of Neda Agha-Soltan / Neda Soltani was uploaded to the internet where it was distributed widely through Facebook, Youtube as well as *Twitter* and then run by major news organisations (Tait & Weaver, 2009). Other examples of using *Twitter* to share media included Revolutionary Road, Iran Network Now, Tehran Bureau, Anonymous Iran, United4Iran, and Iranallday.

The right hand cluster appeared to have large numbers engaging in the days immediately after the election, but with the greater emphasis on 'showing your support for democracy' than discussion, coordination or media sharing. Instead of long term interaction many users applied a green overlay on their avatar. As a result this #tag is heavily liked to helpiranelection.com created by a software developer in Israel (Arik, 2009). In the weeks after the election, only 2 small groups of users had contributed to both groups, identified on the two lines linking the larger clusters. This situation changed little through to November 2009.



The difference between the content of the tweets can also be seen through world clouds of the most common words in the tweets. The larger the word in the cloud the more often, comparatively, that word has appeared.

Word cloud of common words used in #FreeIran



Word cloud of common words used in #Sohrab

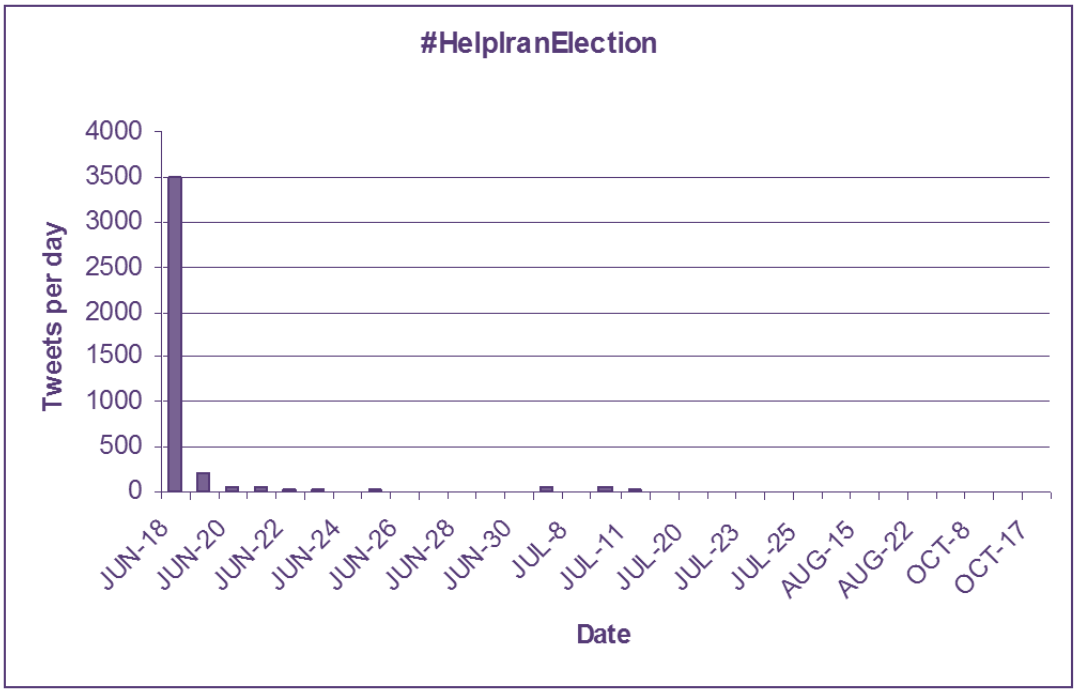
Word Cloud of common words used in #HelpIranElection

Among the observations which can be made; first there are significantly less words visible in the #HelpIranElection cloud. This is because the #tag was used

almost entirely to re-tweet the same message. Almost 78% of #HelpIranElection Tweets were identical;

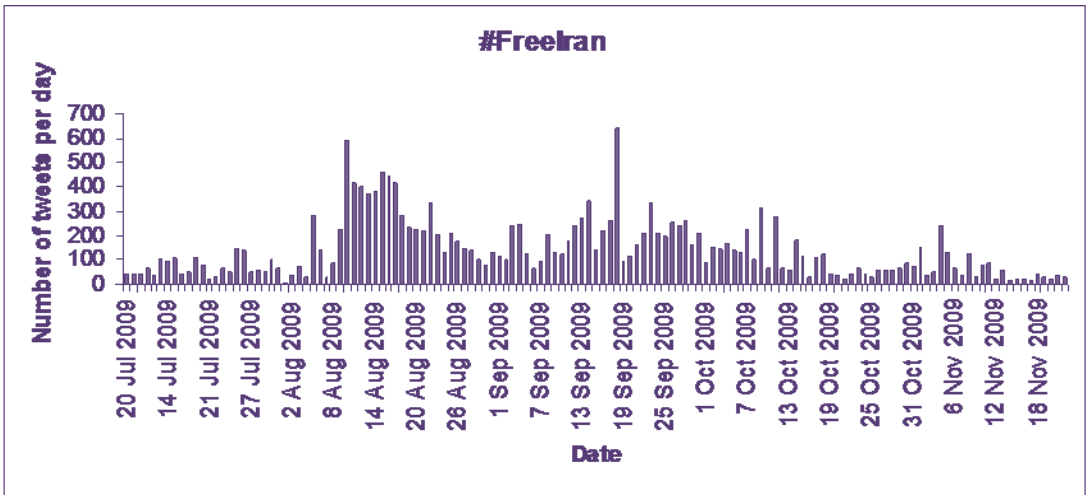
#helpiranelection - show support for democracy in Iran add green overlay to your Twitter avatar with 1-click - http://helpiranelection.com/

In contrast, the other clouds have vastly more words, as the tweets were more often individual messages rather than repetition. RT appeared in 37% of tweets using #FreeIran during the four weeks after the election.

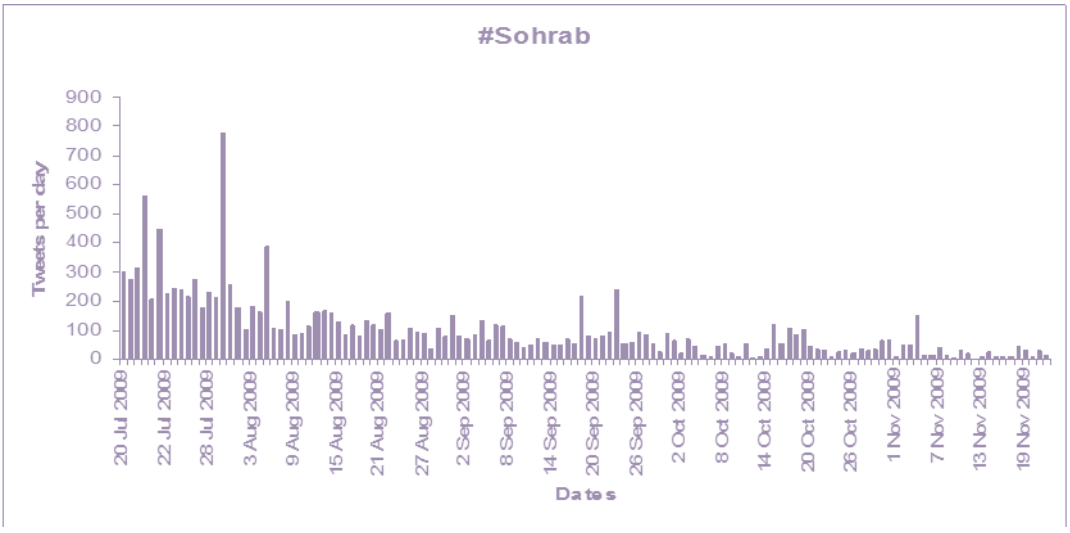


Similarly the characteristics of the activity are significantly different. For example the #HelpIranElection had a massive surge of activity in the days following the election. Use of the tag dropped off rapidly to only a couple of tweets a day before falling into disuse. This is indicative of short term viral spread. In combination with the network mapping this also demonstrates that users of #HelpIranElection were largely isolated 'outsiders'. For most users, this was the extent of their involvement on *Twitter*, the majority never used the #tags used by activists or 'insiders'.

This is in sharp contrast to the use of #FreeIran. Analysis of this #tag shows a much slower uptake, but a much longer usage.



#Sohrab also demonstrates longer usage, through to November, but declining as time passes from the even which lead to its creation.



The differing levels of tweets per user also highlight the distinction between 'insiders' and 'outsiders'. In the case of #FreeIran the average tweets per user was 15.4, #Sohrab it was 11.99, while #HelpIranElection was used on average 1.09 times; the difference between genuine engagement and the ephemeral 'click to show your support' of #HelpIranElection users.

The example of these #tags aligns with the research from the Web Ecology Project (2009) of tweets on 'Iran' during the 18 days surrounding the election; "59.3% of users tweet just once, and these users contribute 14.1% of the total number" (p.1). Equally, "The top 10% of users in our study account for 65.5% of total tweets" (Web Ecology Project, 2009). Both numbers challenge the idea of a 'global discussion' or conclusions drawn from highlighting the huge numbers of users involved and demonstrate the importance of differentiating between the levels of interaction by *Twitter* users.

Information overload

In addition to those #tags mapped, there was another vastly more popular tag, #IranElection, which may have provided a source of overlap between some of the conversations. However, analysis of this tag has to consider the practical ability of a user to read or interact with the volume of data. #IranElection had so much data that on average a user would have had to scan 1,000 tweets every hour to keep up, however, at times the reality was actually even harder to monitor.

Ben Parr (2009) writing on Mashable.com highlighted the massive surge in tweets mentioning "Iran" on 16th June when users produced 221,744 tweets in one hour. Tweets using #IranElection were regularly above 10,000 per hour during June, with over 22,500 tweets in an hour on 16th June (Parr, 2009). At these volumes readers would have needed to read 3695 tweets a minute or 61 Tweets a second to read all "Iran" content and 375 tweets a minute to keep up with #IranElection. The result was that other #tags became the coordination points for particular groups online as shown by the mapping of interaction between #Neda, #GR88, #Sohrab and #FreeIran.

Users were not only being sent a tweet, *Twitter* was being used as a means to transfer links to stories or video, so a single tweet could occupy a reader for significantly longer than the time it took to read 140 characters. The information overload also included, 2,250,000 blog posts and 3000 videos were posted about Iran in 24 hours around 16th June. As Ben Parr (2009) observed, "Even if every video were just two minutes, that would be over 6000 minutes of video related to the Iran situation" which would take just over four days to watch if it were possible to view video for that long without a break. While numbers may well be inflated by RT and many people reposting the same video, along with regional or linguistic factors influencing access to particular videos *Twitter* became a means of coordination for media sharing as well as coordination on the streets. While the quantity of material produced is an interesting aspect of the analysis covered in depth by the *Web Ecology Project*, (2009) analysis of the behaviour of *Twitter* users must consider the practical ability to engage with that volume of data and the subsequent coordination games which influenced the decision to adopt alternative focal points (Castronova, 2005).

The coordination was in two forms, first the use of tagging within social media shown by the example of *Twitter*. Despite the image of the internet providing the potential to reach any information, human behaviour leads to 'local' clusters of individuals huddling around certain points. The development of 'local' coordination points by different groups in turn influenced the information which each group accessed.

The second aspect of coordination is an expansion of coordination on *Twitter* to the wider social media. Specifically, bloggers were attempting to identify major developments for readers. These efforts included Trita Parsi (*National Iranian American Council*), Nico Pitney (*Huffington Post*), Andrew Sulivan (*Daily Dish, the*

Atlantic), and sites such as *Enduring America*. The differing choices of tags and individuals to follow led these bloggers to different sources of information and influenced their interpretations. In addition, these coordination points can be read in English, further coordination points existed in other languages for example http://balatarin.com/. This, despite the passable Google translation, meant many will have still coordinated around information in the language they were able to read.

Differentiating between the volume of tweets and interaction or coordination around specific points provides a means to begin to understand the use of social media in protest. *Twitter* is important in this process as it functioned as a filter through which content from many other forms of social media was shared. The result was not a story of a genuine mass engagement around a single issue but a mass of smaller pockets of interaction.

These pockets of 'local' interaction and different levels of interaction resulted in one loosely engaged 'outsider' group seeking to show support, while other more deeply involved 'insider' groups were seeking to get their story heard by a wider audience. Unfortunately each group was telling themselves rather than each other, with very few exceptions.

Perspectives on protest

The 2009 protests had much more in common with the use of social media by the *N30* protestors than the 1999 student protests in Iran. Iran 2009 and *N30* demonstrate activity by a number of groups a means to achieve the dual goals of coordinating activity on the streets while publicising their efforts to a wider audience. Both used dispersed communications system, similar to that conceived by Paul Baran (1964), provided great strength to the networks. In both cases the networks were able to quickly adapt to changing circumstance and continue to interact despite state

attempts to curtail access to communications and remove important nodes from the network.

While writing about the Battle in Seattle, Paul de Armond (2001) noted that the new factor which led to success of protesters at *N30* was "the richer informational environment, which makes the organization of civil (and uncivil) society into networks easier, less costly, and more efficient" (p.233). Ten years on from *N30* the information environment had become even more rich, with services such as *Twitter* providing a means to share links to further sources of information. There is little doubt that in the face of state pressure the technology made organisation easier and less costly (whether in terms of financial cost or level of risk). However, the case of Iran 2009 calls into question whether this level of information actually made the network more efficient.

The data shows messages spread via *Twitter* to promote particular gatherings or events demonstrate a degree of coordination at street level effectively 'insider' to 'insider' communication. However, the second goal of engagement with the infosphere is more problematic. *Twitter* was certainly an efficient means to transmit information and links to material into the infosphere, shown by the volume of tweets. However, it is less clear whether it was an efficient form of interaction between groups of 'insiders' and 'outsiders'. For example, the choice of tags such as #GR88 #Neda and #Sohrab by 'insiders' demonstrated an introspective tendency that required a degree of knowledge before the reader would understand the link to the election.

The surge in interest in the days following the election provided protesters with an opportunity for engagement with a group within the wider infosphere but those 'insiders' trying to get the message out predominantly engaged with each other rather than proactively with 'outsiders'. The difficulty 'outsiders' may have had

recognising those points required proactive outreach if 'insider' groups wanted to engage 'outsiders'. This might have been possible through RT to #HelpIranElection of tweets from key tags such as #Neda or #GR88. However, this happened very little in the month after the election and nearly all the RT which appear in #HelpIranElection were merely repeating the dominant message.

These insights from the Iranian protests suggest three interrelated points which have wider implications for the conduct, reporting and analysis of future large scale protest movements when they produce a massive volume of information. First, a key factor which hampered wider understanding of events by 'outsiders', perhaps counter intuitively, was the shear volume of material. It was not finding information which was the problem it was making sense of it, whether in terms of recognising tags or filtering information.

The attempt to restrict access to communications in Iran also appears to have had perhaps unforeseen impacts on engagement in the infosphere. The restrictions lead those individuals looking for external interaction, rather than internal coordination, to focus on getting the message out; for example 25% of Tweets studied by the Web Ecology Project (2009) were RT. While understandable, the focus was on sending the message rather than engaging 'outsiders'.

Strangely, if the restrictions had been more successful, it may have simplified the situation for 'outsiders' by reducing the volume of information and making it easier to identify those with which to interact. This is most likely the opposite impact from that which was intended. In future, states facing dispersed networks of protesters in might seek to respond by flooding channels of communication rather than restrict access, mimicking the swarm tactics (Arquilla & Ronfeldt, 2000) of protesters at *N30*

and COP 15 along with the thinking behind 'outsiders' changing their location to Tehran or timezone to +3.30.

Second, the volume of material and the lack of highly visible but independent news coordination points limited the ease with which loosely interested 'outsiders' could engage and through which stories could reach journalists. The rise of Indymedia, since the inception of IMC Seattle to cover the WTO in 1999, with over forty nodes subsequently established, has provided a stable platform through which dispersed information could be accessed. This maintained the flexibility of non-centralised communications, while creating a rallying point for individuals seeking to show support and access information which was distinct from the traditional and commercial news sources.

The web site created to cover *N30* received almost 1.5 million hits during the WTO protests and today the IMC sites globally are estimated to receive between 500,000 and two million page views daily (IndyMedia, 2007). In contrast, the Iranian protest movement lacked a coordination point for resources, information and support which was obvious to 'outsiders'. Facing limitations on the use of traditional media whether due to state control or linked to #CNNfail, with a few exceptions material discovery largely relied on viral pathways or an active interest in the subject by the reader. Those blogs offering commentary, such as the *Daily Dish* or *Enduring America* that did attempt to provide some sort of coordinated coverage, were themselves having to pick-up what they could from around the web or via *Twitter*.

The success of viral sharing of certain videos, did not result in *Twitter* 'outsiders' who showed support in the days after the election subsequently engaging with discussions such as #GR88 in the following months. Equally individuals with a few thousand followers repeatedly required 'outsiders' to be pro-active in identifying

individuals to follow if they were to gain the range of information which they could get through certain #tags. It also lost the resilience of the dispersed network, shown when @PerisanKiwi, who had 32,000 followers, stopped tweeting on 24th June shortly after sending the message, "we must go - dont know when we can get internet - they take 1 of us, they will torture and get names - now we must move fast" (PersianKiwi, 2009).

Third, as a result of the difficulty of interacting in such a rich environment, the Iranian protesters may well have been less successful at engaging the wider audience than the *N30* protesters ten years earlier. While not ignoring the events which were as iconic as they were tragic, this did not result in large-scale *interaction* with 'outsiders' who were previously disengaged from Iranian politics, as shown by the content of tweets and the mapping of the resulting network.

Future protest

Ultimately the struggle for power between those behind protest movements and those who seek to resist them will continue to rely on how effectively interlocutors are able to utilise the networks of resources available to them. Protest movements will continually have to find ways to identify coordination points which 'outsiders' can recognise without losing the strength and flexibility of a dispersed communications system. As they do so it will be increasingly important that protesters remember the observation made by John Arquilla and David Ronfeldt (2000); "Swarming is seemingly amorphous, but it is a deliberately structured, coordinated, strategic way to strike from all directions" (p. vii). If the protest appears amorphous to sympathetic 'outsiders' then protesters will struggle to gain support, but become too structured and authorities may find it easier to disrupt the channels used for

coordination. In effect protest movements will have to tread a line somewhere between viral transmission and establishing centralised 'followers'.

However, as analysis has shown, the ability for protesters to coordinate and get the message from the streets to the infosphere may not be their greatest challenge; it may be getting their message through the infosphere to recipients seeking to interact with them. In which case, future struggles might not be won or lost on the ability to transmit. They will be influenced by which side can most effectively:

- Identify coordination points 'outsiders' can easily recognise, while weakening or flooding those of the opposition,
- Allow filtering of their information while hampering the other side's attempts.
- Engage and *interact* with the wider groups while preventing the protagonists' attempts at communication from leaving the infosphere.

Academic study of protest movements will be increasingly able to track digital communications between different groups and identify the points around which they coordinate. The ability to identify these points within the chosen means of communication may provide a further opportunity to map not just the coordination points within one means of communication but map the other forms of digital material spread through tools such as *Twitter*.

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