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Hypercities Captures a Revolution

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 start

slow

fast



Ayo_moro

Libya

RT @ShababLibya:
BREAKING: TRIPOLI:
MARCHING IN THE STREETS
AND CHANTING! We'll have
a Free Libya soon, #feb17
#gaddacicrimes #libya

February 21, 2011 00:31:03 AM

Hypercities Captures a Revolution

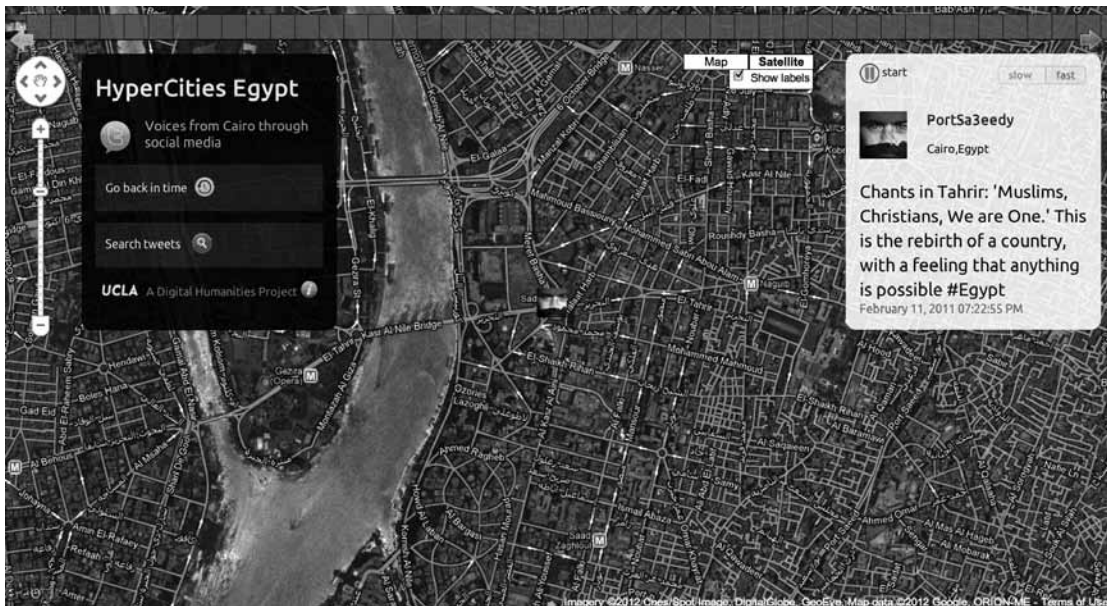
Shadrach Florea, Chirag Rabari, & Karna Wong

University of California, Los Angeles

The ubiquitous presence of “smart” phones, mobile Internet-connected devices, and rapidly evolving social media platforms such as Twitter and Facebook, is changing the nature of political activism. Recent uprisings like the 2011 revolt in Tunisia have been popularly anointed as “Twitter Revolutions.” Critical Planning sat down with Technologist Yoh Kawano and Humanities Professor Todd Presner, both from the University of California’s Center for Digital Humanities and creators of Hypercities, a digital research and education platform, as well as Urban Planning PhD student John Scott-Railton, founder of The Voices Feeds, to discuss their respective work digitally chronicling the social revolutions in Egypt and Libya. The interviews shed light on a relatively new area of research among social scientists, and reveal how emerging technologies are impacting the relationship between people and the state.

The Arab Spring, the democratic movement that swept the Islamic world and toppled regimes from Tunisia to Egypt started on December 17, 2010 when Mohamed Bouazizi set himself on fire, protesting the government in his rural town of Sidi Bouzid, Tunisia. Police had confiscated Bouazizi’s fruit and vegetable cart because he did not have a permit. Bouazizi was the breadwinner for his widowed mother and six siblings,¹ and his desperate response -- his injuries proved fatal -- led to immediate protests in Sidi Bouzid. Video clips of these protests, recorded on mobile phones and posted on the Internet, spread quickly across Tunisia and the Arab world, often shared on social media sites such as Facebook,² or satellite news sources like Al Jazeera, both outside of the government’s control. Within days, protests spread across the country, calling upon President Zine El Abidine Ben Ali to step down. When Mr. Bouazizi died in early January 2011, millions of Tunisians viewed his funeral on Facebook³. The momentum in Tunisia set off uprisings across the Middle East⁴. As of May 2012, civil resistance in the form of protests, strikes, demonstrations, marches, and rallies have erupted in Bahrain, Syria, Algeria, Iraq, Jordan, Kuwait, Morocco, and Oman; and government leaders have been forced from power in, Egypt, Libya, Yemen, and Bouazizi’s native Tunisia.⁵

Following the lead of earlier protests in Moldova in 2009 and the Iranian “Green Revolution”, the widespread protests that broke out after the 2009 presidential election, Arab Spring protesters have heavily embraced new social media tools to organize, communicate, and raise awareness of state attempts at repression and Internet censorship⁶. Many of the demonstrations have met violent responses from authorities or pro-government militias and counter-demonstrators.



Media technology has always been a central player in social revolutions. Gutenberg’s printing press allowed books, pamphlets, and newspapers to spread new ideas throughout Europe precipitating the social upheavals of the reformation period and eventually the revolutions that have defined modern Europe and America⁷. Networking technologies—from messenger pigeons to the radio—have been equally critical, uniting disparate groups and regions together to share information and forge a common cause or identity. Radio inventor Guglielmo Marconi famously predicted that: “The coming of the wireless era will make war impossible, because it will make war ridiculous⁸.”

Today’s powerful new digital media and networking tools—primarily the Internet and cheap mobile Internet enabled smart phones—are now widely

available and critical to our modern economy. As the events of Moldova, Iran, and the Arab Spring have shown they are also powerful new tools of political activism, and authoritarian regimes have scrambled to adjust to the potential threat. Authoritarian regimes have employed a variety of strategies from digital disinformation campaigns to bans on foreign technology companies like Twitter, or even shutting down the Internet entirely. In some countries, notably Egypt and Tunisia, these efforts have failed to stop the revolutions and new governments are now in place. In others, such as Syria, Iran, authorities have pushed the cyber war farther targeting computers of activists with malware and trojans, mapping social networks and reviewing online social histories in order to track down and arrest additional activists⁹.

These recent revolutions have unleashed a lively intellectual debate about the role of new media technologies. Many popular media pundits, such as journalist Andrew Sullivan, have declared that a new era of political activism is upon us where the Internet is the new public town square, and cheap mobile phones and social media platforms will democratize authoritarian regimes.¹⁰ Critics, such as Malcolm Gladwell, have countered that these new tools are simply that, new tools, and are no substitutes for old fashioned political organizing; nor have they displaced the important role that conventional media—television, newspapers and radio—still play in shaping the public debate¹¹. Other critics, like technologist Evgeny Morozov, have gone even farther and condemned the hype as techno-utopianism. Morozov has pointed to the examples of Iran and China and claimed that new technologies are actually helping authoritarian regimes by enabling them to both easily track activists and to closely monitor public sentiment¹².

Scholars at the University of California at Los Angeles's (UCLA) Center for Digital Humanities are at the forefront of these debates. Through a series of visualization projects on its HyperCities website the center has digitally chronicled the online protests in Egypt, Libya, and Iran, archiving them for historians, political scientists and scholars of media and communication studies. HyperCities is a collaborative research and educational platform for traveling back in time to explore the historical layers of city spaces in an interactive, hypermedia environment¹³. Along with UCLA, HyperCities partners with University of Southern California, The City University of New York (CUNY), CUNY-Baruch College, and other organizations.

The first HyperCities project on social revolution that effectively integrated multimedia and mapping was UCLA graduate student Xarene Eskandar's chronicling the history of the election protests in Iran. Eskandar's project began on June 13, 2009, and continued through December in a HyperCities map collection¹⁴. This project includes a collection of curated geo-located maps and chronologically organizes more than 800 YouTube videos, Twitter feeds, Flickr photographs, and other forms of documentation¹⁵. The result is the largest, day-by-day, hour-by-hour, and sometimes even minute-by-minute web documentation of the election protests in Iran¹⁶. Eskandar, who is from Iran and still has family there, wanted the media and the world to know about the events transpiring in Iran. This project inspired the Egypt, Libya, and Japan visualization projects.

This project on Iran is on YouTube at:
http://www.youtube.com/watch?v=qkEN02dGOIU&feature=player_embedded#!

"HyperCities Egypt: Voices from Cairo through Social Media" has mapped tweets sent by protesters in Cairo beginning January 30, 2011. Tweets are archived with hashtags (a metadata identifier typically used for social networking services¹⁷) relevant to the protests, such as #jan25 or #egypt¹⁸.

The tweets' location is based on the locations that Twitter users provide in their profiles, or GPS coordinates supplied by mobile devices¹⁹. To protect users, coordinates supplied by mobile devices are truncated so that they are only accurate to about a kilometer when they are displayed²⁰.



To view the Egypt project, visit HyperCities' website at <http://egypt.hypercities.com/>.

After the overthrow of the long-time Tunisian president, the Egyptian revolution began on January 25, 2011. Millions of protesters from a variety of socioeconomic and religious backgrounds demanded the overthrow of Egyptian President Hosni Mubarak²¹. Although most demonstrations, marches, acts of civil disobedience, and labor strikes were non-violent, there were violent clashes with at least 846 people killed and 6,000 injured²². The uprising took place in Cairo, Alexandria, and in other cities in Egypt. Egyptian protesters focused on legal and political issues including police brutality, state of emergency laws, lack of free elections and freedom of speech, uncontrollable corruption, and economic issues



including high unemployment, food price inflation, and low minimum wages²³. On February 11, 2011, Mubarak succumbed to the political pressure and resigned from office.


The Egypt project is the brainchild of Todd Presner, HyperCities Director (Germanic Languages, Comparative Literature, and Digital Humanities, UCLA), David Shepard, HyperCities technical lead and project manager (English, UCLA), and Yoh Kawano, HyperCities Technical Lead (Academic Technology Services, UCLA). In Egypt, social media played a pivotal role for emergency communication, political organizing, and real time news. For example, democracy activist Esraa Abdel Fattah was dubbed “Facebook Girl” after she was arrested in 2008 for organizing other young Egyptians through the April

start slow fast

 **janocharbel**
Cairo, Egypt


My camera is stolen, my body is bruised and my eye is still black & blue, but I've never felt better in my life.
#Egypt #Revoluton
February 4, 2011 11:49:15 PM

start slow fast

 **NadiaE**
Cairo, Egypt

I have cried my heart out today. So happy we stood our ground and didnt let our martyrs down #jan25
February 11, 2011 06:53:18 PM

start slow fast

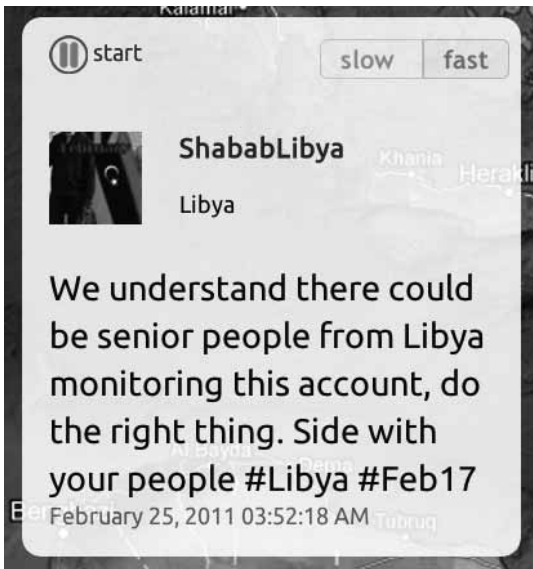
 **alijammool**
Libya

RT @ShababLibya: i thought we only study revolutions in the boring old history classes, but to take part in one? in anyway even just an RT is amazing #Libya
February 21, 2011 00:30:34 AM

start slow fast

 **alainvilla**
UK but hearts in tripoli

RT @LibyansUnite: this is it for gaddafi. he is finished. he can wipe out the libyan population. but the whole world now knows what a monster he is #libya
February 23, 2011 10:26:10 PM



6 Facebook Youth Movement. 24. She was also an organizer for the major protest in Tahrir Square on January 25th, regularly using social media to keep her fellow Egyptians and the world apprised of events as they were happening on the ground. The Egypt project is the brainchild of Todd Presner, HyperCities Director (Germanic Languages, Comparative Literature, and Digital Humanities, UCLA), David Shepard, HyperCities technical lead and project manager (English, UCLA), and Yoh Kawano, HyperCities Technical Lead (Academic Technology Services, UCLA).

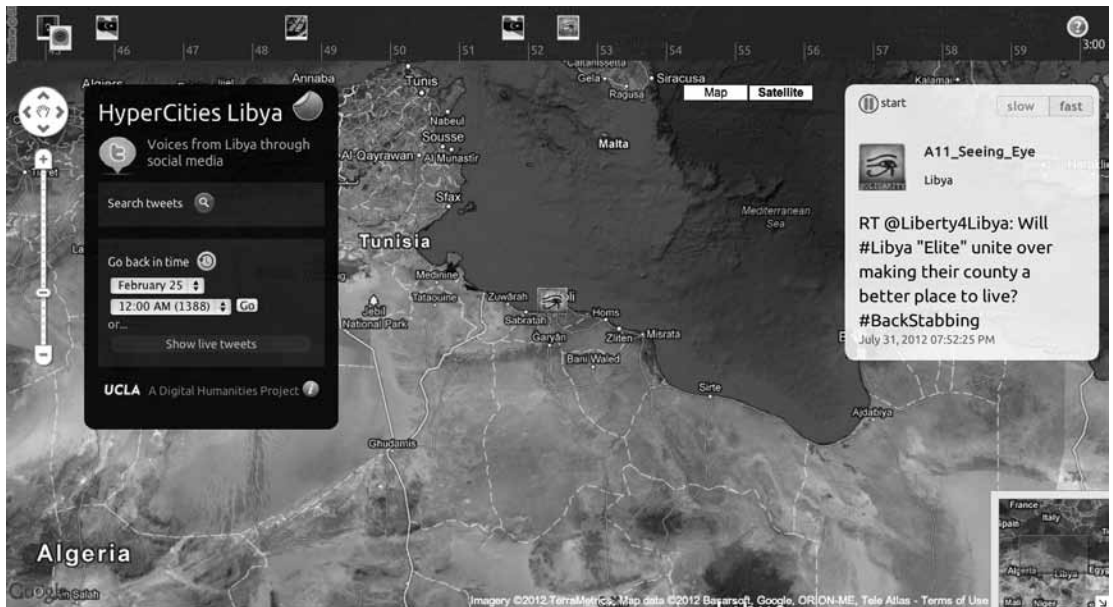
After the Egypt project, HyperCities began capturing political events in Libya by mapping tweets. In Libya, anti-government protests begin on February 15, 2011, leading to civil war between opposition forces and Moammar Gadhafi loyalists²⁵. The government overthrown on August 23, 2011, and Gadhafi was

killed by transition forces on October 20, 2011.

HyperCities' visualization projects have archived 400,000 tweets from Egypt and 450,000 tweets from Libya (search parameters are based on keyword and displayed as data visualization over time)²⁶.

While Hypercities was mapping the public tweets from Egypt and Libya, Urban Planning PhD student John Scott-Railton was working hard with local activists to ensure that those tweets became public. On January 27th, 2010 the Egyptian Government tried to silence activists by effectively shutting down the Internet. John Scott-Railton worked with local Egyptians to build @jan25voices, a journalist twitter account that contacted Egyptians by telephone and then published their audio calls²⁷. @jan25voices was one of the few sources of on the ground information of Cairo during the Internet shutdown. When Libya uprising broke out John joined with the husband and wife team Abdulla Darrat and Sarah Abdurrahman (also of NPR's On the Media) to build @feb17voices. The team posted in English, Arabic, and Arabic with English voice overs provided by Mr. Durrat and Ms. Abudrrahman²⁸.

At a time when journalists were largely unable to effectively travel in Libya, @feb17voices provided real time updates and live voices from those inside Libya. The team and volunteers reported live during the Siege of Misrata, the Battle for Tripoli, the ongoing fights in the Western Mountains, and the final siege of Sirte. The Voices Feeds project was widely cited by news organizations such as the Guardian, Reuters, and Al Jazeera. Today the project is still live although largely quiet now that journalists have free range in the countries.



You can see the voices feeds project at: <http://johnscottrailton.com/the-voices-feeds/>

In recent interviews, the HyperCities team and John Scott-Railton discussed the technical and ethical issues behind their work and what social scientists are learning about how technology is changing the political landscape of the world.

Yoh Kawano works at the Institute for Digital Research and Education (IDRE), serving as the Campus GISCoordinator while holding lecturer positions in the Digital Humanities and the School of Public Affairs. He has supervised projects in urban planning, emergency preparedness, disaster relief, volunteerism, archaeology, and the digital

humanities. Current research and projects involve the geo-spatial web,

visualization of temporal and spatial data, radiation mapping, and creating systems that leverage social media and web services in conjunction with traditional information systems. He is currently involved in the ongoing nuclear crisis in Japan, working as a GIS and visualization specialist for a research project based in Niigata University, collaborating with local governments who are actively measuring radiation levels in communities surrounding the Fukushima Nuclear Plants.

CP: What was the inspiration to create a digital visualization of the political events in Iran? Why was mapping tweets the method selected to capture live information?

A PhD student from Tehran, Xarene Eskandar, came up with the idea of a spatial temporal narrative format. It did not involve Twitter, but video clips posted on YouTube about the Iran political uprising. She geo-tagged and time-tagged hundreds of video clips. She wanted the media and the world to know about the events.

CP: What lessons learned from the HyperCities Iran project were carried over to create HyperCities Egypt? What improvements were made to the Egypt project?

We thought about using Facebook, but their content is private. Whereas, Twitter's information is open and has a spatial dimension. We determined the hashtags that were most relevant and archived the tweets to provide a historical perspective. Typically, tweets have a short life span of about 7 days to search past tweets.

We dumped all of the relevant tweets into a database as a way to study the impacts of social media. There were new tweets every second which would appear on the map almost like a live ticker bar reporting events in real time. It was interesting to compare the television news, like CNN, and their reporting of events and then the tweets which were what people [in Tehran and Cairo] were seeing, saying, and feeling. We could compare the top down and bottom up approaches to reporting the news.

CP: Who are the typical persons who are tweeting? Who do you think is the audience for HyperCities Iran and HyperCities Egypt?

We do not have demographic information on persons who are tweeting and are captured on the HyperCities platform. We assume that they are a younger generation with access to technology. We may assume that they live in more urban areas, but the Internet is so prevalent internationally (through Internet cafes, etc.). In fact, Google tracks Internet usage by country. HyperCities' platform is viewed predominately by academics. It does not really have an audience; instead it is a platform to visualize social media.

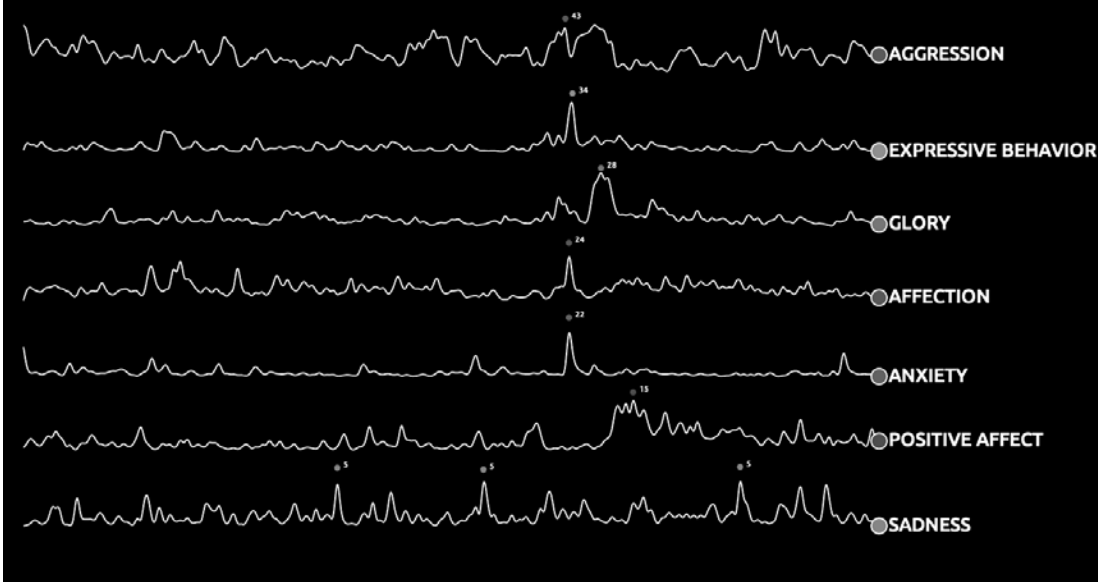
Some leaders of the revolution predicted that the Internet may be cut off, as a form of government control. One of the revolutionists works for Google and set up a telephone hotline for information since the internet was not available at times²⁹.

CP: What have been the takeaways from these revolutions revealed from the HyperCities projects?

In Egypt, HyperCities archived millions of tweets (with up to 140 characters per tweet), and then started to categorize them. We developed emotional characterizations of happy or angry. We could see trends in anger rising and wanted to try to predict the sentiments of the people. [This could be considered a new format of political polling.] In addition, with the spatial data we could also determine the emotions of tweeters in different locations, e.g. urban/rural or west/east areas.

Egypt Revolution

Monday 12:00 February 14, 2011



CP: How can this technology be applicable for other situations?

I am not a social media user, perhaps because I am of an older generation. But as a technologist, I am interested in harnessing technologies to help societies. In Washington D.C. the transportation system agency is using Twitter to report problems or crimes on transportation lines. This is similar to a suggestion or comment box but electronically, in real time, and with locational data.

It is also interesting to compare top down and bottom up usage of technology. There are times when

the government controls the internet and has the ability to terminate access. On August 11, 2011, for example, activists gathered at San Francisco train stations to protest the killing a month prior of Oscar Grant by Bay Area Rapid Transit (BART) officers. The San Francisco transit agency shut down internet and phone-access at four San Francisco train stations in hopes of quelling the protest.

When the earthquake in Japan happened, the electricity went down but the telephones were working. Texting became a virtual bulletin board for people to share up-to-date information. I know that Red Cross and other international organizations are looking

at the internet and wireless technology to help in emergency/disaster situations. For example, instead of calling 911, there could be a designated hashtag to tweet an agency for assistance in an emergency. If this person has geo-enabled their cellular phone, then the agency would know their location. This could be useful if there is no electricity and someone is trapped under a building and unsure of their exact location.

A new project by HyperCities captured 700,000 tweets from Japan in the aftermath of the earthquake and tsunami on March 11, 2011.

You can see the Japan project at: <http://gis.ats.ucla.edu/japan/>

Todd Presner is Professor of Germanic Languages, Comparative Literature, and Jewish Studies at the University of California Los Angeles. He is the Director of the UCLA Center for Jewish Studies and is also the Chair of the Digital Humanities Program and founder of the Hypercities project. His research focuses on European intellectual history, the history of media, visual culture, digital humanities, and cultural geography. He is the author of two books “Mobile Modernity: Germans, Jews, Trains”, and “Muscular Judaism: The Jewish Body and the Politics of Regeneration.”³¹

CP: Please explain the background of the Hypercities projects in Iran, Egypt, and Libya.

People first started talking about “twitter revolutions” in 2009 in Moldova, and then in Tehran during the election protests. People were basically just trying to figure out how social media could be harnessed for protest. Mainly because the bar for participation is very low, not necessarily because you need a computer, but because you need a device connected to the Internet like a mobile phone with which one can do a number of things. One can put out information, or one can put out disinformation. One can harness a group of people to appear or protest. One can also put out information of what to do when to do, where to go. One can document, with a cell phone especially, a video that is given a very specific time stamp, and potentially a location stamp if it is enabled with a GPS device.

So you have a number of things going on, you have real time organizing and perhaps real time disorganizing because there are always forces that go both directions, particularly in the Twitter world where you have governments which are very well aware active disinformation campaigns, especially the Syrian government to really undermine efforts of protestors. We saw some of this in Egypt and to a lesser extent Libya as well. One aspect is information disinformation, another aspect is real time organizing, and another aspect is documentation, the historical record. It’s a record of the present. That’s really where Xarene’s project began. She’s from Tehran, he happened to be living in Los Angeles. She was watching the sheer thousands of videos being taken on cell phones and put up on YouTube. And it was sort of a mishmash of where they were. And so what she decided to do was engage

in what I would call critical curation. She wanted to curate, like an exhibition, the history of those protests. Day by day, hour by hour, and sometimes minute by minute—and this was a manual process.

Xarene knew the city very well and she also had informants and family there so she would say, (for example) gunshots heard at this corner at 4:44 pm on this day and here is a video of it, and at 4:52 this street is blocked and 6:00PM this street is blocked. And you can go through day by day and she has more than a thousand pinpoints on a series of maps this was really kind of a project of memory, I believe. Of course this was also a project that documents the protests over many months in 2009 and extending over the next year as well. So that was really the first project where we began to explore social media, mapping technologies, and these kinds of expanded notions of the public sphere.

CP: How is technology changing the way in which authoritarian governments such as Iran's handle political activists? Are there general trends?

One of the things that we look at is Google transparency reports, which basically look at use of Google technologies by the hour. One of the chilling things is to look at the places when the line goes essentially dead. It's like a person's heartbeat, where you see these ups and downs. There are moments, particularly in Egypt in late January, but also several in Libya and Syria where the line goes flat. Where the government has cracked down and turned off the Internet or access to any device that could get online. Sometimes it's just turning off particular services, like individual companies, cellular companies or fiber optic companies. The Internet can be turned on and off, or up and down at

the will of a government. That's one way governments have handled threats—by isolating the public. All of these devices that have been put into the hands of the public to ostensibly participate or communicate or network or to get information out. Well the obvious way to do it is turn it off. So that's perhaps the most chilling way. But you see interesting correlations as well when the services are turned down by looking at the ups or downs.

When the means of documentation are taken out of the hands of the people—you know obviously the more global knowledge of events that exists then the more external pressure being put on governments. It's very difficult to exert pressure in an information vacuum. Maybe it will incite violence in that country but it's also what they are thinking, it's an information vacuum. The Syrian government is thought to have done all kinds of malicious things in order to intercept communications and undermine protestors. Particularly by installing surveillance technologies on their computers in order to count and track keystrokes, to find out identities, and all kinds of things. They have a very highly developed means of intercepting the messages and communications of protestors, from having them accept false security certificates, to having them install, unbeknownst to them, surveillance technologies that can actually track every keystroke. That's another way these governments are handling these threats through more surveillance and creating information vacuums.

In Iran, social media has to be seen as dialectical. Meaning it does two things at once, it enables people to protest and get the word out and document, and it potentially is something the government can use to later crack down, track, and persecute people who

use it. So I wouldn't say social media is just liberating or democratizing, it's not, it can be used by a government to exert more power. But I would also put out there that every networking technology in the history of civilization has been used this way--the radio for example. The radio was a way to get out information to the world. Hitler used the radio as a way to connect with the German population. In Rwanda, the Hutus used the radio to basically coordinate genocide. So it's a technology that you get information out, and you can also use it to do something very violent. The railroad system is another perfect example. When it was first built, it allowed people to communicate and move things around rapidly. Well, it turned out that you can also deport people on it. You know you can pretty much orchestrate genocide like with the Jews. The Internet is the same thing; social media is the same thing. It can be used to get the word out. It can be used to document—and it also leaves behind an information stream that someone who wants to persecute a population can use.

CP: Can you discuss the linkage between what your team is doing at Hypercities and social and political movements.

We've mainly been really just doing things on the archival side, its not really particularly activist but it is trying to produce a documentary record of activism. This is a somewhat different thing. I mean, I think during, the only time it was particularly close together was when we were having the live Twitter stream with what was going on with Egypt, and I would call that largely a technology of amplification. That is to say that the people inside Tahrir Square who were actually protesting and were fighting and were out there. They were the activists. We were not

activists. All we were doing was taking information that they provided online and amplified it further. By putting it on maps we were just giving context to what others were saying. So is that activism? When we amplify others' messages? Maybe a little bit, but I wouldn't want phrase it in the way that we have orchestrated change. I mean, the people in Tahrir Square orchestrated change. All we were interested in doing was amplify their voices and also archiving them. Because we knew that what they were saying would be important for the historical record when one studies this historical period ten, twenty, fifty years from now.

What's interesting about social media is that it allows a vastly expanded public sphere, so usually when you have broadcast media. What you have is people go on location. You have a reporter who interviews people who goes "hey what do you think about this" so you get one, two, maybe ten people you know. Here we have 40,000. That's a different scale. This is what I mean by expanded public sphere. Suddenly the experiences, voices, opinions of many more people begin to count in how we understand an event. And that I think is what's unique about social media. And it's significant. We haven't really come to terms with that. There are a very small number of informants that historians usually use when they talk about historical events. People who wrote letters or diaries. I mean how many people wrote letters during a major historical event, before social media? You have maybe hundreds of letter writers, and maybe hundreds who wrote diaries, but here you are talking about potentially tens of thousands, hundreds of thousands of people. So it opens up our knowledge of events in very profound ways. And that I think we haven't begun to come to terms with. Historians have no idea what to

do with this. But scale is going to be something very significant that we have to deal with when we talk about historical events. The scale of participation and the wide range of the digital record in understanding how those events unfolded.

CP: Does it tend to be a skewed point of view because the people who are using twitter are perhaps younger, more urban, maybe even more educated or affluent?

That's true. I think you are right. At least at this point it is. I think it will sort itself out over time. That is to say obviously as the younger generation becomes older, younger generations come forward. We are at the very beginning. Probably the people who are primarily using these technologies right now I would say are somewhat more affluent, although the pervasiveness of cellphones in all the countries you are talking about is very significant. There are examples and I think John Scott-Railton could give you examples of this as well, that he talked to people who are in their 60s and 70s who were just looking out their windows and he tweeted their messages. And so, here's a moment of the connection where that person was not tweeting but someone was tweeting on behalf of them, and John was that person. So yeah, there are these structural, I would say some disparities right now in users of technologies in terms of age and class primarily. I sense these things will we will see much more pervasiveness where those lines begin to break down. But think about these technologies, in many cases these are less than half a decade old--under five years. So I don't think we have come to terms with their possibilities and we would be really dumb to dismiss them as fly by night.

CP: Today technology companies like Facebook, Google, Apple, Amazon, etc. are rapidly acquiring detailed databases on their consumers. Meanwhile cell phone companies always know where people are--at least as long as the phone is on.

That's a very interesting point. The kind of acceptance of sorts of Facebook and Google which are pretty much creating amazingly complex profiles and databases of consumer behavior—down to what I like, what I dislike, what I click on, what I buy, where I buy it. And as soon as you have this for 20 or 30 years you can track like pretty interesting trends about my behavior and my friends' behaviors, and so forth. And keep in mind that this is all technology that I provide the data for. I mean I don't have to use Facebook. I provide all the data. Every single thing that I do on Google technologies I am providing them with the data and so, same thing with Facebook. Every single object that I upload, tag, like, comment on, click on, link. I've provided all of that. I have opted in. So the answer here is for me not to use the technology, or to be aware that that's what's going to happen that they are going to use the data I provided to use profiling software.

CP: Any thoughts about Urban Planners interested in how the changing technology affects urbanities?

These are primarily things that happen in urban spaces. Urban spaces are pervaded by technologies. Information technologies. Information networks. These are primarily mediated through our devices and my sense is that there is a level of the built world and a level of the digital world that are merging together. Cities radically changed when you had electrification, when you had sewer systems installed, when you had

cars, telephones, networks. Digital technologies are another level of the networked urban city and anyone who studies the history of urbanism is also studying the history of networks, communities, communications, and this is really just another level of that. Urbanists would be advised to have this historical perspective of how urban spaces have changed through networking technologies—railways, cars, telephones, electrification, Internet. And I think we'll probably see an acceleration of sorts and kind of a contraction of space and time. So the speed that information is disseminated now is very, very fast and of course it is all connected to mobility. But we are still people with physical bodies, we still have to get from here to there and bodies have to move somewhere. Often our bodies are moving significantly slower than the information, and there are different rates of exchange of movement and urbanists have to study all of these things. The city is impacted by all of these simultaneously. Every single thing that allows an urban space to emerge as an urban space, and that goes back to the building of streets in antiquity or the creation of plaza or public forums for people to give talks. What's a public space? That's a really interesting question. What's a private space? And how have those things always changed? The question shouldn't just be how they are changing with social media. But how did they change with print? With lithography? How did they change with newspapers? Urbanists should always be thinking of all of these things.

John Scott Railton is an Urban Planning PhD Student at University of California of Los Angeles. He created the Voices Feeds project that worked with local volunteers and activists in order to broadcast tweets from Egypt and Libya during the recent revolutions when the Internet was shut down by the governments.

He has several forthcoming papers based on his ongoing research of the impact of networking technology on social activism, journalism, and political regimes. In addition to his efforts to maintain the free flow of information, John Scott Railton researches how urban populations adapt to rapid climate changes with a primary focus on Dakar, Senegal.

CP: How is the relationship between government and technology changing?

I think it's a very interesting time to be engaged with the use of technology with political speech. Part of why is because the possibilities of the technology continue to evolve, as do the possibilities for surveillance. That is the possibilities for both use and misuse. I think that The Arab Spring has been instructive for both showing how the technologies can be used to dramatically reduce asymmetries and access for tools for strategic communication with large and small "S", between opposition groups, dissidents, and governments. I think that we are in a place now where we are learning a lot how about how by default access to technology or media does not reduce the asymmetries of risk as much as perhaps we might have hoped between political groups, dissidents, and states. Political speech in an authoritarian context is dangerous. What we're trying to do, anyone who is looking at this is trying to understand how more familiar ethical precepts apply, and then how specifically ethical ideas and systems associated with technology apply. I think this is a very live space and it's just fantastic and fascinating to watch. The questions are very difficult and one thing I hope going forward that we will spend more time trying to better understand those risks. I think the Arab Spring is an illustration of both the risks and the benefits being very high.

I think I am equally concerned in situations where there's a little bit less visibility to the risks on the front end but they may still be there. For example if a state becomes more authoritarian and they have had access to all kinds of sophisticated ways of monitoring their citizens, this is obviously a huge concern. I think that a couple things are very important, and I guess I'll just say I am a great believer in the rule of law and in self-regulation by states where the population has visibility and an understanding in what's going on. That's a continual process.

I think there's a wide range of actions coming out of states, international bodies, think tanks, activists, activist organizations, and technology companies all looking at these questions. I think it's an interesting time in part because everybody recognizes these questions are things that need to be thought about. Right now is a time when groups are working to ensure their interests gets heard and that certainly includes groups making sure that privacy and freedom of speech.

CP: Based on your experiences what do you see in the way technology changing the way in which authoritarian governments are handling perceived threats from political activists?

There's a kind of rapid evolution—or an arms race if you will—going on between people using the internet to facilitate political speech and states both trying to limit that speech, but also to use the medium to gain access to information about people undertaking that speech. So you have a couple of different phenomenon going on at the same time. One is filtering and another is something closer to surveillance. There obviously there is a lot more than just that going on, but let's stick to that for this conversation. On

the one hand you have states getting increasingly sophisticated about using filtering tools in an attempt to block services whether it be something like twitter or Facebook—or to try to do content based blocking to look for words that aren't appropriate, or other prohibited things like trying to block Skype calls or trying to block circumvention tools. Then you have another layer which is states actively using people's network activity to spy on them, or to gain more information on them. And of course both of these things are usually in play at the same time.

I think Syria's an interesting case where we can tell this story: The state is both engaging in efforts to restrict dissident's access to communications tools that would allow them to push information out to the broader global audience as well as communicate with each other and at the same time the state is using its position on the network as an observer to try and gain information about the people who engage in those activities. In the early part of the uprising last year, Syria was primarily using its ability to engage in passive network monitoring as well as some kind of filtering to control the Internet space. Therefore dissidents displaced their communications activity into tools and services that the State had less visibility of. For example, they would start using a proxy to protect their data from observation the Syrian government, so now that data was coming out in another country. That's sort of this evolution of relationships between activists and states as states become more aware that activism is happening online.

What's happened since this is very interesting which is that the state has not been passive in response to that. What the state has done, or perhaps what we should call “pro-government electronic actors” have done, is

to engage in active attacks against the machine of pro-opposition Syrians, and their personal data and accounts, that includes attempts to steal their credentials by creating fake log in pages for Skype or Facebook, but it also includes deploying a range of remote access trojans, which are then used to extricate information about those opposition supporters—and who they are in contact with—from their computers. And one way the pro-government electronic actors have done this happens when the government detains people, for example. They will then use that individual's account to pass malware, espionage software, to others who are in that person's trusted network. So that would be an example of an evolution that is going on now, and it remains to be seen exactly how the pro-opposition Syrians will respond to this threat. Right now, we are in a place where a lot of the tools that exist to help mask or otherwise protect information are reasonably well known compared to ways to actually protect machines from this kind of malware which are much less available, and consequently much less available to the Syrian opposition. Something similar happened in Libya where the Gadhafi regime definitely turned off the Internet that displaced all of the opposition's internet activity on to other tools like two way Satellite internet. When that happened the Gadhafi regime then found itself in a position where it still obviously wanted access to those communication. So it engaged in much more aggressive attack based activity such as deploying trojans.

CP: Where do these malware and trojans originate? Do these states have strong or advanced information security apparatus that manufacturers these tools? Is there an open market where they buy these tools? Is there any evidence of information sharing among these authoritarian regimes?

The case in Libya, where I will be publishing a forthcoming case study on, is similar to what's going on in Syria. Pro-government electronic actors have largely used Trojan software that is freely available online, or available for a small fee. This is very different from sophisticated malware. What that means in practice is that it gives these actors some degree of obscurity because they are using a tool that anybody could download so it becomes very difficult to figure out who they are. There are certainly other cases in the Middle East and elsewhere where states are not deploying this sort of inexpensive somewhat detectable malware. Instead they are deploying bespoke or custom developed highly expensive tools that are much more resistant to analysis and do the job much more silently with much less detectability to anti-virus or anti-malware tools. States can take one of two paths, both Libya and Syria for whatever reasons appear to have taken the path of using cheap tools that are not custom developed.

As to the question [about] information sharing among governments, that is a very complicated question. On the one hand I think that there is enough similarity in some of the texture of operations of both Syria and Libya that would have ended up using some of the same tools that part shouldn't be surprising. As to information sharing among states that is a commonly made assertion by opposition groups that there indeed appears that there is some sort of information sharing going on, for example, between the Syrian government and pro-government electronic actors but cooperation among other states that is much more difficult to determine. I don't really have any insight into that. I don't engage in any twitter activity with Syria, I have only worked with Libya and Egypt.

CP: How important a role did you see Social Media as playing in your experiences?

Here's an interesting and I think very instructive story about social media. For example, there is the question about the importance of social media versus traditional media. The role of Al Jazeera was perhaps more important than social media. Although I do think that a lot of the published internet penetration rates are a bit low particularly as they don't typically include mobile devices, but it is certainly the case that the total number of internet users in Libya was very small, at least in the beginning of the uprising, and probably to this day. So how could social media have played a role—any kind of causal role? Well, if you get granular with the data one of the things that you will find is that in the very first days of the protests in Libya international news organizations were looking at social media and were reporting what was going on with social media in Libya. I think that there is an interesting point to be made here. Part of the role that social media played, at least in Libya, was, for example if you look at the “Day of Rage” Facebook page was that this was something that got reported on Al Jazeera and then that reporting got beamed right back to the people of Libya, so that suddenly a very large segment of the population could see that local groups that were advocating protests were growing. One neat thing—and I hope to see more scholarship on this—is that is not a decontextualized thing that only acts in its own sphere. It's something that in part because of what people saw in Egypt and Tunisia, is that it is capable of generating buzz and attention far beyond just the twitter followers that focus on it.

CP: What role—if any—have the private technology companies that often own these services and technologies played during the revolutions of the Arab spring? What do you think?

I think one of the most important things that have come out of the Arab Spring is that a lot of these tools are being used in ways that their founders never anticipated. And that includes being used in context where the risk is substantially higher. For example, webmail services were never designed to be used by opposition forces in a country where there's also military conflict going on and the state is actively trying to block those accounts through hacking or some other means. That being said, I think one of the really critical things that has to keep happening is that as tech companies sort out the ways in which they deal with the conflicting financial, legal, and pressures that face—as well as pressures from activists and other groups—I think that transparency is really key. There's a core issue in that you are using a service—and there is an obviously kind of a consent process that goes into that—but I think as a series of societies we are all still working on understanding all of the implications of the consent that we have sometimes given to social media and others to do with our personal information—and all the risk associated with that. To me, what is interesting to Google's transparency reports is that's a way for them to still fulfill their legal obligations, such as disclosing information, but also to be partially transparent to their user bases. I think it's an interesting model, and in some ways an example of something we need to see more of which is transparency from that space towards users. A better approach to making it clear to users what kind of choices they are actually making and what some of the implications of their actions are. That couldn't be more true in cases where users' lives

or freedom are in the balance.

CP: As someone who has actively worked in countries undergoing civil uprising how do you view scholarly documentary projects such as Hypercities?

I think that what's happening generally people are using social media tools to try to yield up information about what they see and that by engaging in that what they are trying to do is reach an audience. If it's twitter that audience is public. As far as I know, Hypercities is not archiving or otherwise engaging with tweeter feeds that have been protected. What they are doing is really a very important informational role. For example to somebody without a lot of granular knowledge about a specific area who might be trying to get a better understanding of what's happening. Tweets, for example, provide a kind of living transcript of what's happening. The Hypercities crew tries to be very careful in the information that they use and not to make anything available that wouldn't already be public. States have a lot of mechanisms to get information. They already have lots of tools for monitoring information and dealing with huge amounts of information, and I think it would have to be shown for example that a state was using Hypercities information in a negative way, before it would outweigh the informational benefit to what they are doing. I think these questions are tricky and I feel that the Hypercities people have given them a lot of thought.

CP: Do you have any final takeaways from your experiences?

Well I think that Eugene Morozov is an interesting thinker and person who has made, quite elegantly, the

point about how internet communications are susceptible to surveillance and the implications of this for dissidents and others. I think that what is incumbent on all of us is to really press our governments, our legislators and the companies that we purchase services from is to be more transparent. Especially about the laws that they are following, but also we need to press for legal innovation and better legal competency and development in dealing with some of these things that are still very much new. Like I said, I am a great fan of the rule of law. To phrase it differently, I would say that if you are trying to address the use of technology by authoritarian regimes to do things like large scale spying on their population, you can only do so much by regulating the technology at some level you will have to return to things like structure of government and the structure of the judiciary and what constitutes reasonable and unreasonable behavior by the state. It's my hope that coming out of the Arab Spring that we can move beyond fascination behind the technology and some of the amazing things its done and remind ourselves that we are talking about very familiar building blocks: speech, freedom, dignity, protection of privacy, and so on.

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Endnotes

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[video-that-triggered-tunisia-uprising/](http://thelede.blogs.nytimes.com/2011/01/22/video-that-triggered-tunisia-uprising/)

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²⁷ <http://johnscottrailton.com/the-voices-feeds/>

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²⁹ Wael Ghonim is the Google Marketing Manager that set up the “We are all Khaled Saeed” Facebook page, in memory of Khaled Saeed who was beaten to death in captivity. Ghonim was later taken into custody for 11 days by the Egyptian Government, but then released and is a very prominent cyber activist in Egypt.

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