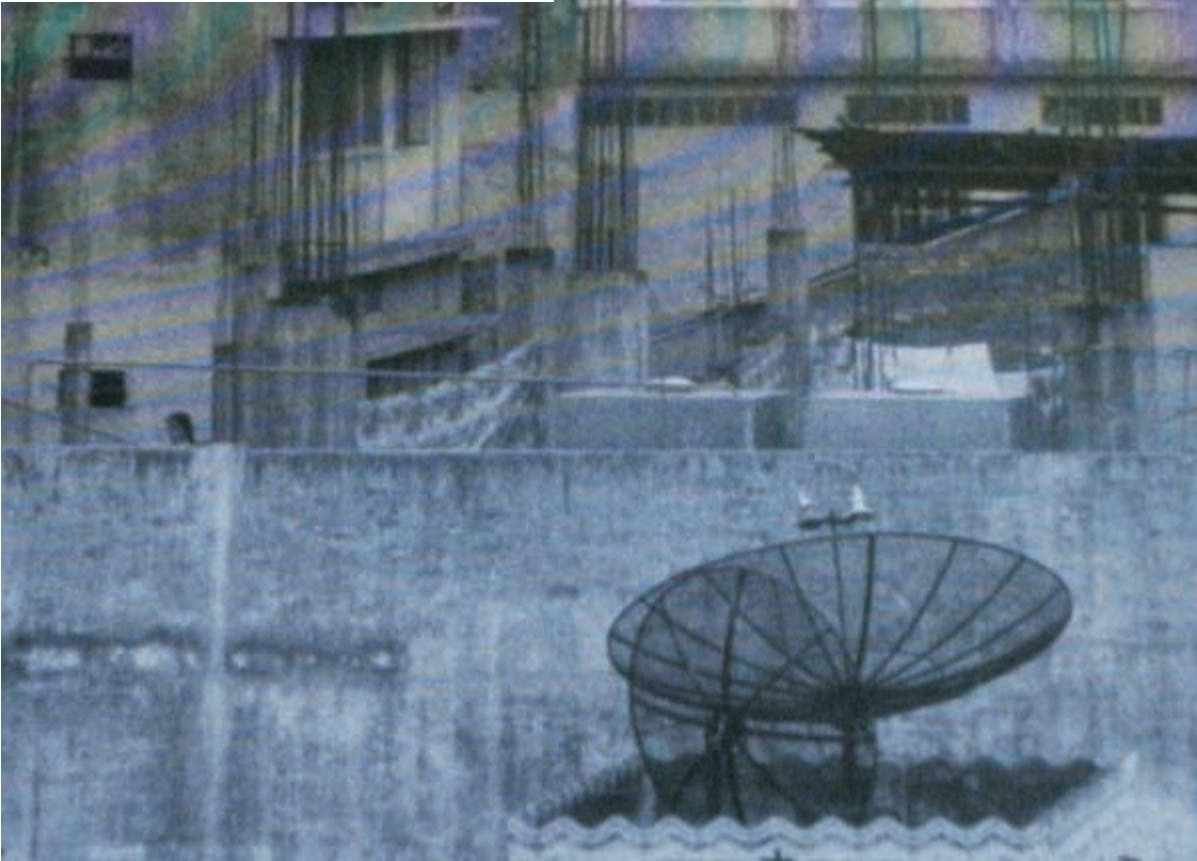


**THE DIGITAL
ORIGINS OF
DICTATORSHIP
AND DEMOCRACY**

*Information Technology
and Political Islam*

Philip N. Howard



The Digital Origins of Dictatorship and Democracy

Oxford Studies in Digital Politics

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Dictatorship and Democracy**
Information Technology and Political
Islam

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This is for four men who served in the military and gave me things. Gordon Howard (Captain, 3rd Canadian Infantry) raised a great father for me; Colin Stratton (Sergeant, Australian 3rd Army Division) raised a great mother for me. Although I only knew them much later in life, Fonzie Graham (Seaman First Class, U.S. Navy) helped raised his fabulous granddaughter, and Charlie Moskos (Specialist, Combat Engineers, U.S. Army) helped raise me as a scholar.

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Doha, Qatar

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The Digital Origins of Dictatorship and Democracy

Prologue: Revolution in the Middle East Will Be Digitized

On Friday, June 12, 2009, Iran voted. On Monday, June 15, Tehran erupted. With implausibly fast ballot counting and high levels of electoral support credited to Mahmoud Ahmadinejad in the dense urban centers and Azeri communities known to back the opposition candidate Mir Hossein Mousavi, the country exploded in demonstrations and violence. Over the next few days, Tehran and other major urban centers saw the largest street protests and rioting since the 1979 Revolution. And the wired world was drawn in.

Domestic politics has often interfered with the administration of elections in Iran, where even competing in elections requires the blessing of the ruling circle of mullahs. The 2005 presidential election that brought Ahmadinejad to power also had irregularities and media blackouts. But this time, civil society groups, social movement leaders, and disaffected youth had access to an information infrastructure largely independent of the state. Armed with mobile phones and the internet, trusted networks of family and friends spread the news of electoral fraud and escalating tensions.

New information and communication technologies (ICTs), such as the internet and mobile phones, have had clear roles both in starting new democratic processes in some countries and in entrenching them in others. Activists in Indonesia effectively used mobile phones to mobilize to topple Suharto in 1998. During Kyrgyzstan's Tulip Revolution of March 2005, mobile phones were again used to organize activists to join protests at key moments, helping democratic leaders build a social movement with sufficient clout to oust the president. Kuwait's women's suffrage movement was much more successful in 2005 than it had been in 2000, in part because it was able to use text messaging to call younger protesters out of school to attend demonstrations. In Egypt, Tunisia and Kazakhstan opposition groups that face state censorship simply move their online content to servers in other countries. Recent elections in Turkey and Malaysia have demonstrated that blogs have a role in

entrenching democratic institutions: challenger candidates who blogged on the campaign trail tended to prevail over incumbents from ruling parties who did not run information-rich campaigns.

Civil society in Iran is incredibly wired, but the political impact of digital media there is difficult to assay. Estimates of the number of blogs in Iran range from 40,000 to 700,000. But if the usual ratio of active blogs to registered blogs holds, there are still upwards of 100,000 active sites in the Persian blogosphere. Once the universal character became widely used, Farsi rose to be the tenth most popular blogging language globally. And for several years, the government has been arresting and fining opposition bloggers based within the country. Even the Revolutionary Guard developed a strategy to generate 10,000 blogs, though the Basij militias have not proven up to this particular task. The Bureau for the Development of Religious Web Logs offers blogging workshops to Iran's clerics. During the protests, even the most apolitical bloggers covered the demonstrations, and traffic at the dominant blogs swelled.

There is one mobile phone for every two people in Iran, though in urban areas the vast majority of residents have a mobile phone. There are over 80 internet service providers operating throughout the country. About one-quarter of the Iran's 70 million people have used the internet, around 10 million are regular users, and the large cohort of youth is particularly sophisticated with digital technologies. So the country has one of the world's most vibrant social media communities and the most concentrated broadcast media system in the Muslim world. Why, then, has the digital revolution in Iran not had the type of clear political outcomes or institutional consequences seen in other authoritarian regimes?

The answer, in part, is that while such information technologies have become a fundamental infrastructure for journalists and civil society groups, they are a necessary but not sufficient causal condition for contemporary regime change. So based on real-world experience, what is the causal recipe for democratization, and are information technologies an important ingredient?

For scholars of political communication and social movements, Iran is an interesting case: it is one of the most wired of Muslim countries and has an organized and articulate democratic movement, yet no democratic revolution appears in sight. If new information technologies have a role in democratization elsewhere, why not in Iran? Indeed, much of the research on ICTs and politics in Iran fails to demonstrate much in the way of democratic outcomes, preferring to say instead that the internet is important for providing rhetorical space for dissent. In many authoritarian states, political parties are simply outlawed, while in others they are tolerated but must identify themselves instead as "organizations" or "social movements."

CAMPAIGNING

In recent years Iranians have come to expect their political candidates to be online—candidates without a web presence simply do not appear modern. Challenger candidates usually avail themselves of more than just websites, however. Ahmadinejad's campaign blog (Ahmadinejad.ir) kept his supporters up to date, responded to political spin, and took donations in support of his campaign. Mousavi's use of digital campaign tools was a strategic response to his exclusion from coverage by state-run television and newspapers. He used Facebook (www.facebook.com/mousavi) to reach out to voters, alert them of his public appearances, and help them build a sense of community. Months after the election, he maintained a dedicated YouTube channel and Twitter feed. Iran watchers have noted that women were particularly active in civic discourse during the elections, engaging in political conversations at new levels and in ways rarely seen in offline public interaction.

The vocal Persian diaspora has long been able to express its interests through broadcast media based in London and Los Angeles, but social networking applications have allowed even small enclaves to create content and reconnect with friends and family in Iran. Within Iran, clerics such as Mohammad Ali Abtahi used Facebook to help organize supporters and host political debates. Facebook was blocked by Iranian authorities soon after it went live in 2004. In a move they probably regret, however, Iran's Council for Determining Instances of Filtering allowed site access early in 2009, and young Iranians took to it quickly. They reconnected with cousins overseas, and they used Facebook applications to socialize with friends living down the street. Opposition campaign managers in Iran consistently say that such internet applications allow them to get messages out as never before and thereby organize bigger and bigger campaign rallies. Without access to broadcast media, savvy opposition campaigners turned social media applications like Facebook from minor pop culture fads into a major tool of political communication.

Several days before election day, a group of employees from Iran's Interior Ministry issued an open letter revealing that they been authorized to change votes. These days, "open" means distributed by email and hosted on websites both inside and outside the country. So the ministry's office of internal affairs was unable to recover the leaked documents. In response, former president Rafsanjani developed a plan for ad hoc exit polling by mobile phones. Deliberative democracy theorists argue that independent exit polling is a key logistical feature of healthy election practices. This probably explains why disabling mobile phone services is so important for discouraging any organized measurement of how rigged a contemporary election may be.

VOTING

SMS traffic surged on the eve of the election, but in the early morning hours before the polls opened on June 12, the text messaging systems went dark, and many mobile phone subscribers found service disrupted. Key opposition websites also went offline, including those of the two high-profile opposition candidates, Mousavi and Karoubi. Foreign news sources, such as the BBC website, are usually blocked from access within Iran, but the list of blocked sites grew significantly that morning. The government began jamming the frequencies of Farsi-language satellite broadcasts from the BBC and Voice of America as well.

PROTESTING

Late in the day, government officials declared that Ahmadinejad had defeated his more moderate challenger, triggering massive street protests by Iranians who doubted—or did not like—this outcome. For many, the outcome was surprising, and the vote tabulation had been implausibly fast.

People took to the streets of Tehran and Esfahan immediately. There was a flood of digital content from the Iranian street: photos, videos, blog posts, tweets, and SMS messages flowed between protesters and out to the international community. While this content was flowing, the government closely inspected digital traffic to try to identify social movement leaders. To regain the upper hand in political communication, the government-run Data Communication of Iran disabled internet access for 45 minutes late in the afternoon on the 13th to initialize its “deep packet” inspection system. The process of inspecting the traffic, however, choked bandwidth to the rest of the world, such that Iran was effectively off the global grid for almost 20 hours between Saturday night and midday Sunday.

To support network communications, the Iranian opposition organized a supply of proxy servers unknown to government censors and coordinated attacks on pro-Ahmadinejad websites and state media portals. Free online tools provided encryption, anonymizers, and other secure communication networks. Despite government interference with digital services, SMS, Twitter, and other social media were used to coordinate massive turnout at protests across the country for Monday, June 15. By Monday, the cyber-war was also well under way. The attacks were launched not only by a few university students well versed in the dark arts of hacking, but by an army of amateurs eager to learn the few basic skills that would collectively overwhelm the government information systems. Parts of the information infrastructure of major government agencies were rendered unusable, from the

Ministries of Justice and Foreign Affairs to the official websites of the police and Supreme Ruler Khamenei.

A few days into the protests, the international community of tech-savvy digerati also began working to disable the government's information infrastructure and support social movement leaders. Volunteers around the world contributed by turning their home computers into proxy servers for users based in Iran, allowing such users to bypass the government's censorship efforts. Pro-democracy activists on the web traded notes on how amateurs could launch denial-of-service attacks on government servers and suggested which targets would be most important. Within Iran, bloggers learned how to get their content around government censors. Tip sheets offered helpful links on how to use Twitter securely and effectively.

Both Facebook and Twitter were used by many young people for street-level communications during the protests. On June 16 the U.S. State Department asked Twitter to delay a network upgrade that would have shut down service for a brief period during daylight hours in Tehran. Over 90 percent of Twitter users in Iran live in Tehran, and 25 percent of the current Iranian user base created accounts during the last three months of political campaigning. State Department spokesman Ian Kelly rejected the accusation that by meddling with the development of Iran's information infrastructure, the Obama administration was taking sides in Iran's disputed elections. "This is about giving their voices a chance to be heard. One of the ways that their voices are heard are through new media," he told reporters.

Twitter was used to help street protesters find safe hospitals, where injuries could be treated without drawing the attention of Basij militias. As these militias moved through neighborhoods and gunshots were heard, alerts went out. When intelligence agents raided an apartment or took a family member, the incident was shared with family and friends. Protest leaders also used Twitter to recruit more international cyberactivists.

Barely a week after the protest marches had begun, Google fast-tracked the development of a Farsi-language translator, and Facebook rushed out a beta translation of its content into Farsi. Both companies were hoping to serve the Persian—and global—online audience eager to communicate about events in Iran.

On June 20, Neda Agha-Soltan was shot dead at a demonstration, and her death was caught on several mobile phone cameras. Just as in-country protests were cooling, the videos of her blood pooling on the street were uploaded to YouTube. Her death, digitally captured and distributed over the internet, became one of the iconic global images of the protest, turning her into a martyr who inspired (rekindled) protests 40 days later.

Twitter user persiankiwi had 24,000 followers by day 6 of the protests. Mousavi11388 was engaging 7,000 followers. #StopAhmadi kept more than

6,000 followers alert to photos streaming up to Flickr. The Twitter service itself was registering 30 new posts a minute with the #IranElection identifier. Specialty Persian news channels in Los Angeles received hundreds of digital videos daily, and YouTube became the repository for the digitally captured, lived experiences of the chaotic streets of Tehran. #CNNfail let the global audience for political clashes in Iran gripe about CNN's paltry coverage. Between June 7 and 26, an estimated 480,000 Twitter users exchanged over 2 million tweets, with Twitter streams peaking on election day at over 200,000 per hour.

Digital media sustained protests well beyond what pundits expected. Indeed, this new information infrastructure gave social movement leaders the capacity not only to reach out to sympathetic audiences overseas but also to reach two important domestic constituencies: rural, conservative voters who had few connections to the urban chaos; and the clerical establishment. The unprecedented activation of weak social ties brought the concerns of disaffected youth, cheated voters, and beaten protesters to the attention of the mullahs. The result was a split within the ruling establishment on how to deal with the insurgency, how to proceed with counting ballots, and how to credibly authorize Ahmadinejad to take power.

CENSORING

In some ways the regime's response was decidedly old media: expelling foreign correspondents, blocking phone lines, preventing the publication of daily newspapers, and accusing enemy governments of spreading misinformation. They did not count on the large number of Iranians eager to submit their own content to international news agencies, and, perhaps more important, they did not realize that large numbers of Iranians would use social media to share their own personal stories of beatings, tear gas inhalation, and protest euphoria with each other.

Almost as quickly as protesters took to Twitter and Facebook, the government's security apparatus began using these applications to spread disinformation. It is estimated that more than 5 million websites are inaccessible from within Iran. Websites run by the Basij collected digital video and photos of protesters and asked Iranians online to help identify particular protesters. And to the surprise of many technorati, it became apparent that the Iranian government had built a single choke point for traffic to the rest of the internet and a deep packet inspection system that would slow traffic to allow for content analysis. Most countries have such monitoring centers, but their use is governed by some public policy oversight designed to identify the lawful circumstances for intercepting traffic. Once built, however, the owners of

such equipment get to decide what those circumstances are and set the keywords that will alert authorities about who is communicating what over the nation's digital infrastructure.

EVALUATING

Overall, it is not clear that the international cyberactivists had more than a symbolic effect on the infrastructure of the Iranian government. It may be in the interests of the ruling mullahs to have opposition venting online, rather than through some other form of political resistance. Many of the tools for attacking government servers, such as BWRaep, also effected the bandwidth available to other users in Iran.

Millions of people took to the streets in the week after the election results were announced and certainly not all were using Twitter. The majority of them, however, were responding to both strong and weak network ties and to the digital technologies designed to maintain those ties. Even with the blackout on domestic broadcast media and censorship of digital traffic, the social movement leaders were able to circumvent the state's choke hold on information flows. Traditional radio and televised appeals did not figure in the mobilization, and they are not very important to understanding what happened in Iran last summer.

With few reporters on the ground, the "technology revolution" was an easy peg for coverage by Western news agencies. Twitter was an important communications tool during the heated days of protest, but an unknown number of the new accounts created in those days belonged to external supporters who identified themselves as being in Tehran; there were also local users who self-identified as being elsewhere in hopes of evading regime censors. Moreover, these tweets reflected the chaos and uncertainty of the time: Iran's supreme mullah Ayatollah Khamenei did not shave his head and attempt to flee in a blue suit. While it is likely that government interference caused disruptions in network communications services, some services would have been crippled by unusually high demand.

Yet, the Iranian government continues to take the threat of digital revolution seriously. On election day, Mousavi had 10,000 fans. A month later he had 10 times that, and a genuinely global campaign. In July the Iranian Parliament began debate on a measure to add websites and blogs promoting "corruption, prostitution and apostasy" to the list of crimes punishable by death. Security officials have detained the webmasters of reformist websites and shut down servers. Several high-profile bloggers remain in prison.

EVOLVING

In the Middle East, elections—even rigged ones—have increasingly become moments of political crisis. Several countries in the region hold legitimate, competitive elections. A few simply ban political parties altogether. Some have elections with open competition at lower levels of office, while the outcome of elections for the executive branch of government are never really in doubt. And even countries allowing party competition can be divided between those in which licensed political parties stand a reasonable chance at achieving electoral victory and those in which official recognition comes with no opportunity to take office. Many ruling elites have managed their country's development for decades. What has radically changed in just the last decade is the information infrastructure of political communication.

At key moments in a political crisis, it is possible for the state to disrupt the supply of newsprint and ink or shut down the broadcast towers of radio and television stations. It is much more challenging for governments to disable networked information infrastructures. Cutting the power to some internet service providers or mobile phone towers often means that information packets flow to other network nodes. Network traffic in and out of a country can sometimes be stopped by disabling the internet exchange points in port cities, but doing so can have broader consequences for the national economy, constraining the capacity of the state organization itself. Regimes that deliberately create choke points in their packet-switching infrastructure are better able to censor, but such points are themselves a security risk for the regime. Technology design can actually involve political strategy and be part of a nation's "constitutional moment." In Iran's case, the ruling elites tried to constitute an information infrastructure that could be closely managed in times of crisis.

NETWORKED EFFERVESCENCE

Street protests are the result of and conduit for collective effervescence, a rare spirit of energy that grips people hungry for change. In contemporary systems of political communication, citizens turn to the internet as a source of news and information in times of political crisis. It is not only that online social networking services are influential as a communications media; rather, they are now also a fundamental infrastructure for social movements. And the internet globalizes local struggles. Authoritarian regimes always conduct propaganda battles over broadcast media. But what is the regime countermeasure for the chilling effects of a plea from someone in your social network who has been a victim of police brutality?

Cyberactivism is no longer the unique provenance of isolated, politically motivated hackers. It is instead deeply integrated with contemporary social movement strategy and accessible to computer and mobile phone users with only basic skills: it is a distinguishing feature of modern political communication and a means of creating the *élan* that marks social change. Twitter may have been the branded information tool of choice for some of Iran's opposition opinion leaders, and other tools will emerge in the years ahead. The service routes messages from many sources to many users through varied outlets from webpages, mobile phones, and many other kinds of consumer electronics. But it is the networked design that is a distinguishing feature of social media that will be ever more threatening to authoritarian rule.

Information and communication technologies are the infrastructure for transposing democratic ideals from community to community. They support the process of learning new approaches to political representation, of testing new organizational strategies, and of cognitively extending the possibilities and prospects for political transformation from one context to another. It does not matter that the number of bloggers, twitterers, or internet users may seem small, because in a networked social moment only a few "brokers" need to be using these tools to keep everyone up to date. These are the communication tools for the wealthy, urban, educated elites whose loyalties or defection will make or break authoritarian rule. Indeed, it is probably more useful to evaluate applications such as Twitter through the communities they support, rather than through tool features. Twitter communities have leaders and followers, and tweets supply them with information, misinformation, and disinformation. During the protests, the top 10 percent of users generated over 65 percent of the tweets.

Limited by 140-character bursts of content, Twitter would not be the tool for sharing nuanced political critiques. But it would be a mistake to tie any theory of social change to a particular piece of software. In the summer of 2009 the Iranian insurgency was very much shaped by several digital communication tools, which allowed social movements within the country to organize protests and exchange information and made it possible for those groups to maintain contact with the rest of the world. Most important, the internet gave the social movement access to the clerical establishment through weak ties of social networks that connected mullahs to Iranians on the street. Social movement scholars write that elite defection usually marks the end of an authoritarian regime. And in addition, in the West, democracy advocates with an internet connection can support an international social movement by contributing bandwidth and computing resources just by running a piece of software.

If Iranians have grown accustomed to clerical interference in elections, why did they take to the streets in such force? If new information technologies

such as mobile phones and the internet provided the communications infrastructure for mobilization, was the lack of democratic transition a technological or social failing?

In the language of fuzzy sets ways, Iran's postelection insurgency was *almost* an example of a digital revolution. It is unlikely that protests would have lasted as long, raised so much international support, and had such an impact on domestic politics had it not been for mobile phones and the internet. The internet did not cause the insurgency, and it is probably a truism to say that no contemporary democratic revolution in the Middle East will happen without the internet. In times of political crisis, banal tools for wasting time, like Twitter and YouTube, become the supporting infrastructure of social movements. As one ethnic Azeri blogger told me, the regime has learned that the internet makes collective action possible.

Technology alone does not cause political change—it did not in Iran's case. But it does provide new capacities and impose new constraints on political actors. New information technologies do not topple dictators; they are used to catch dictators off-guard. Today, being an effective social movement means utilizing social media. However, the world has seen interest in change expressed from within Iran, and this may prove to be the most destabilizing outcome of the protests. The regime's brutalities streamed around the globe. The world saw the dissent; the regime knows the world saw the dissent.

In the summer of 2009 we learned that Islamic democracies will be born digital. The initial conditions for social movement organizing are very different from those of the pre-internet era. Iran's street protests failed to topple their government. But just as important, the world's most technologically advanced censors failed to manage the government's election crisis. And the region's dictators have a new concern: their own tech-savvy, disaffected youth.