Mapping the Arabic Blogosphere: Politics, Culture, and Dissent

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ABOUT THE INTERNET & DEMOCRACY PROJECT

This case study is part of a series of studies produced by the Internet & Democracy Project, a research initiative at the Berkman Center for Internet & Society at Harvard University, which investigates the impact of the Internet on civic engagement and democratic processes. More information on the Internet & Democracy Project can be found at:
http://blogs.law.harvard.edu/idblog/.

The project's initial case studies investigated three frequently cited examples of the Internet's influence on democracy. The first case looked at the user-generated news site OhmyNews and its impact on the 2002 elections in South Korea. The second documented the role of technology in Ukraine's Orange Revolution. The third analyzed the network composition and content of the Iranian blogosphere. Fall 2008 saw the release of a new series of case studies, which broadened the scope of our research and examined some less well-known parts of the research landscape. In a pair of studies, we reviewed the role of networked technologies in the 2007 civic crises of Burma's Saffron Revolution and Kenya's post-election turmoil. In April 2009, Urs Gasser's three-part case study examined the role of technology in Switzerland's semi-direct democracy. This case expands on our study of foreign blogospheres with an analysis of the Arabic blogosphere.

KEY FINDINGS

This study explores the structure and content of the Arabic blogosphere using link analysis, term frequency analysis, and human coding of individual blogs. We identified a base network of approximately 35,000 active Arabic language blogs (about half as many as we found in a previous study of the Persian blogosphere), discovered several thousand Arabic blogs with mixed use of Arabic, English and French, created a network map of the 6,000 most connected blogs, and with a team of Arabic speakers hand coded over 4,000 blogs. The goal for the study was to produce a baseline assessment of the networked public sphere in the Arab Middle East, and its relationship to a range of emergent issues, including politics, media, religion, culture, and international affairs. We found:

- **A Country-Based Network:** We found that the Arabic blogosphere is organized primarily around countries. We found the primary groupings in the Arabic language blogosphere to be:

    - **Egypt** - this is by far the largest cluster and includes several distinct sub-clusters, one of which is characterized by secular reformist bloggers, and another by members of the Muslim Brotherhood, a group that is technically illegal in Egypt but whose online presence appears to be tolerated.
    - **Saudi Arabia** - this comprises the second largest cluster and focuses more on personal diaries and less on politics than other groups.
    - **Kuwait** - this cluster is divided into two sub-clusters based on bloggers' language preferences, splitting those that write primarily in English from those that use Arabic.   Both groups focus heavily on domestic news and politics, though the Anglophone bloggers are more likely to advocate reform and discuss economic and women's rights issues.
    - **Levantine/English Bridge** - this group of bloggers is located mainly in the countries of the eastern Mediterranean sometimes referred to collectively as the Levant, including Lebanon, Palestine, Jordan and Syria, as well as most bloggers from Iraq. Bloggers in this group frequently use English in addition to, or instead of, Arabic. They are joined in this section of the network, which connects to the US and international blogosphere, by 'bridge bloggers' from other Arab countries, who write mainly in English.
    - **Syria** - this cluster features frequent, though often mild, criticism of domestic leaders and both includes Arabic language bloggers with closer links to those in Saudi Arabia, and English language bloggers closer to those in the Levantine/English Bridge region.
    - **Maghreb/French Bridge -** this group is comprised of a cross-national set of bloggers located mainly in Morocco, Tunisia, and Algeria. Many of these bloggers write in a mixture of Arabic and French. Other bloggers from the Maghreb eschew French and are found among the religion-focused bloggers.
    - **Islam-focus** – this cluster is a loosely connected set of bloggers from various Arab countries who are focused mainly on Islam, mixing personal, theological, and political topics.

- **Who are Arabic Bloggers?** Demographic coding indicates that Arabic bloggers are predominately young and male. The highest proportion of female bloggers is found in the Egyptian youth sub-cluster, while the Maghreb/French Bridge and Syrian clusters have the highest concentration of males.

- **Personal Life and Local Issues are Most Important**: Overall, the writing of most bloggers is centered on personal, diary-style observations. Those that write about politics tend to focus on issues within their own country and are more often than not critical of domestic political leaders. Foreign political leaders are discussed less often and most commonly in terms more negative than positive. Domestic news is more popular than international news among general politics and public life topics, especially within large national clusters writing entirely in Arabic. The one political issue that commands the most attention of bloggers across the Arab world is Palestine, and in particular the situation in Gaza (Israel's December 2008/January 2009 military action occurred during the study).

- **Discussion of the United States**: The United States is not a dominant political topic in Arabic blogs; neither are the wars in Iraq or Afghanistan. Most discussion of the United States is in the English Bridge and Syrian clusters, and when the United States is discussed, it is usually in critical terms.

- **Muslim Brotherhood**: Although the Muslim Brotherhood is technically illegal in Egypt, it has a very active presence in the blogosphere. Like other Egyptian political bloggers, 'Brother bloggers' talk about human rights and defend those who have been arrested by the government. They are also engaged in public debate about the organization's future and priorities. This debate is mainly between the older establishment leaders and younger reform-minded members, but there is also a wing of younger conservatives pushing back against the latter. Though a minority, a number of Muslim Brotherhood bloggers are women.

- **Terrorism**: Terrorism is a bigger issue among Levantine/English Bridge and Syrian bloggers than others, where it is not a major issue. Across the map however, when discussing terrorism, Arab bloggers are overwhelmingly critical of violent extremists. We consider this a positive finding, although qualified because the issue of attitudes toward terrorism hinge on the term's interpretation across the Arab world. Whatever its presence in other, less 'public' online venues, overt support for violent global confrontation with the West appears to be exceedingly rare in blogs. However, it is not unusual to find blogs that criticize terrorists on the one hand, and praise Hamas or Hezbollah for violent 'resistance' to Israel on the other. This complex issue merits additional research.

- **Iraqi bloggers**: While much has been made of Iraqi bloggers during ongoing debates about the Iraq war, this group does not figure prominently in the Arabic blogosphere. Rather, they are deeply integrated into the English Bridge group. This may be because many Iraqi bloggers write in English and have many inbound links from US think tanks, journalists, and partisan political bloggers (*Iraq the Model* on the

right, *Riverbend* on the left, for example), rather than mainly writing for a domestic public.[1]

- **Religion**: Religion is a very popular topic in the blogosphere, and appears to be discussed more in terms of personal religious thoughts and experiences than in its political or theological aspects. Criticism of other faiths is minimal, though can be strident. The exception is a cluster of bloggers within the Islam-focus area, from various countries, who write about Islam from a conservative perspective and frequently criticize other faiths.

- **Human Rights and Culture**: Human rights (civil and political rights) are also a popular topic of conversation across the Arabic blogosphere—much more uniformly common than discussion of Western culture and values, which is concentrated mainly in the Levantine/English Bridge cluster. Among cultural topics, poetry, literature, and art are more popular across the board than pop culture (music, TV, and movies).

- **Arabic Media Ecosystem**: Bloggers link to Web 2.0 sites such as YouTube and Wikipedia (both English and Arabic versions) more than other sources of information and news available on the Internet. Al Jazeera is the top mainstream media source, followed by the BBC and Al Arabiya, while US-government funded media outlets like Radio Sawa and Al Hurra are linked to relatively infrequently. National media outlets are cited mainly by their respective national clusters.

- **YouTube**: Arabic bloggers tend to prefer politically-oriented YouTube videos to cultural ones. Videos related to the conflict in Gaza and the throwing of shoes at George Bush in Iraq are popular across the entire blogosphere, while clips related to domestic political issues are linked to more heavily by the various national clusters.

- **Anonymity**: In general, Arabic bloggers are more likely than not to use their name when blogging, as opposed to writing anonymously or using an obvious pseudonym. The exceptions are Syrian, Kuwaiti, and Maghreb/French Bridge bloggers, as well as a small cluster of Egyptian Baha'i bloggers, who write about their persecution. Generally, women are more likely to blog anonymously than men.

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[1] Marc Lynch, "Blogging the New Arab Public," Arab Media & Society, Issue 1, Spring 2007, http://www.arabmediasociety.com/?article=10 (accessed May 19, 2009).

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INTRODUCTION

On January 17, 2009, a popular Saudi TV sports program covered the day's disappointing loss by the national soccer team to Oman in the Gulf Cup. The show's host and his guests, including a professional soccer player and a former coach, are critiquing the team and its management when a call comes in from Saudi Prince Sultan bin Fahd, a key patron of the team. He is not happy with their analysis. On air, the prince dresses them down in turn, and goes so far as to tell one of them he is poorly raised, a serious insult in Saudi culture. The prince's tone is disrespectful, and his words are not those of a leader to citizens, but of a ruler to his subjects. A clip of the tirade quickly appears on YouTube, and blogs and online forums post the link, spawning long chains of comments. These are overwhelmingly critical of the prince, who was seen as speaking to the commentators as though they were his slaves.

On August 28, 2008, a clip entitled 'The Pasha's Daughter is Terrifying People on the Street' was uploaded to YouTube. Shot with a mobile phone camera, it shows a young woman threatening a man in the streets of Giza, in the aftermath of a fender-bender in which she hit his car. She brandishes an electric cattle prod and threatens him with the power of her father, a high-ranking security official, whom she calls on her mobile phone. A bystander who captured the event sent the video to a prominent blogger, who posted it on YouTube and tracked down the woman's license plate number. The clip was cited by a number of other Egyptian bloggers, and spawned threads of comments critical of the woman's abuse of her father's power. Other online comments were more critical of the language she used, which was deemed impious. Someone, presumably not Egyptian, re-uploaded the clip under the title 'An Egyptian Woman Insulting God in the Street.' An Egyptian newspaper picked up the story and located the victim, who said that in the aftermath, the woman's mother had come forward to apologize to him, which he accepted.

These two stories (and there are many more) illustrate the collision of old realities and new technologies taking place in the Arab world, and a surprising number of elements intertwine in them: abuse of power, legitimacy of authority, the power of television, the ubiquity of video cameras, feedback between blogs and the press, traditional vs. modern sensibilities, freedom of expression, the power of online voices, and the scope of political arenas—local, national, pan-Arab, pan-Muslim, global. At stake in this collision are both the symbolic construction and the hard power of 'The Public' across the region. Notable is the seamless combination of modes of communication into a single system: face-to-face interaction (including cattle prods), mobile phones, television, newspapers, and multiple genres of Internet sites (blogs, forums, chat rooms, video sharing, photo sharing, etc.). Increasingly, these comprise an emerging *networked public sphere,* in which the power of elites to control the public agenda and bracket the range of allowable opinions is seriously challenged.

Around the world, in open and repressive nations alike, Internet-based communications provide new channels for citizen voices, minority viewpoints, and political mobilization, and challenge the traditional regimes of public mass communication. Opinions are mixed about the promise and dangers that may result. Yochai Benkler presents a compelling view of the networked public sphere as a boon for individual autonomy and freedom, breaking elite strangleholds on democratic discourse and drawing diverse interests and talents into a

common arena.[2] Cass Sunstein warns of the radicalizing tendencies of micro-publics dividing themselves into groups of the like-minded.[3] Public discussion of the Internet in the Arab world often reflects these competing views, with fear of jihadist radicalization on the one hand and hopes for a democratic transformation of the Middle East on the other. Others note the significant advantages that dictatorial regimes retain in controlling the Internet and limiting online speech.[4] This last point is crucial, since the degree of freedom allowed for online speech may determine whether Benkler's dream or Sunstein's nightmare better describes the Arabic Internet's future.

We looked at a new, and still small, component of the Arabic Internet, but one that in many places has emerged as arguably the most consequential in remaking public sphere communications: the 'blogosphere.' In the evolution of Internet communication genres, older forms like e-mail, listservs, bulletin boards, chat rooms, online forums, and threaded newsgroups have been joined and often supplanted in popularity by newer ones like Web logs (blogs), social network services and, lately, Twitter. In the United States and many other places, these new genres have developed in two principal directions: a) Toward platforms for public speech that foster an interaction among viewpoints and interface with the traditional mass-mediated public sphere, and; b) Toward better-networked private sphere platforms where individuals cultivate their social networks, but also where the like-minded can collect and mobilize mainly outside the view of the uninvited. Private sphere networks such as Facebook can have a powerful public impact, when used to mobilize campaign volunteers in the United States for instance, or a labor strike in Egypt, but the network of persistent, hyperlinked discourse formed mainly by blogs has become an important component of the democratic public sphere in countries like the United States and South Korea, and even in repressive quasi-democracies like Iran.

Older genres of online discourse, particularly forums and password-protected bulletin boards, are extremely popular in the Arab world, and have a history as major venues for politically sensitive topics of all sorts, from women's rights to violent extremism. As more clearly *public* genres of online speech emerge elsewhere, these 'shadow publics' may continue to thrive in part because of government repression (or social sanction) that threaten those who would speak their minds openly. These 'shadow publics' are not in the scope of this study. We fully expect the tone and breadth of discussions in these alternatives forums, which are recognized as active and important venues for Internet activity in the Arabic speaking world, to be substantially different from the blogosphere. We do not intend to either underemphasize the importance of these forums or to imply that observations from the blogosphere are of equal applicability to these spaces.

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[2] Yochai Benkler, *The Wealth of Networks: How Social Production Transforms Markets and Freedoms* (New Haven: Yale University Press, 2006) 129-272.

[3] Cass Sunstein, "The Daily We," *Boston Review*, Summer 2001, available at http://bostonreview.net/BR26.3/sunstein.html (accessed November 26, 2007); See also Cass Sunstein, Republic.com (Princeton: Princeton University Press, 2001).

[4] Shanti Kalathil and Taylor Boas, *Open Networks, Closed Regimes: The Impact of the Internet on Authoritarian Rule* (Washington, DC: Carnegie Endowment For International Peace, 2003); see also Kristin Lord, *The Perils and Promise of Global Transparency: Why the Information Revolution May Not Lead to Security, Democracy, or Peace* (Albany: SUNY Press, 2006).

Social theorists, from Mill and Dewey to Benkler and Sunstein, stress the importance of open dialog between differing perspectives as a key practice underlying democracy, without which democratic institutions will be ineffective and perhaps short-lived. A key question then in the Middle East is whether a space for open democratic discourse can open up between repressive, elite-controlled public spheres on the one hand, and the hidden discourse of myriad private spheres on the other. The goal of the current study is to examine the Arab publics that are coalescing online in Web logs in order to establish benchmarks for the current state of the blogosphere and to identify issues to watch going forward.

We found a complex network that includes bloggers from at least 18 Arabic speaking countries, as well as Arab expats living in Europe, the United States, South America, and elsewhere, based on large-scale social network mapping and computer text analysis of over 6,000 of the most-linked to Arab Web logs, combined with human coding of over 4,000 blogs. Within the overall network, coherent clusters of blogs emerge, based on similarities in linking choices by bloggers. In the Arabic blogosphere the primary centers of gravity are national, with Egypt, Saudi Arabia, and Kuwait having the largest clusters. Another part of the network draws together bloggers from many nations, especially from the Levant region, in an extensive group that mixes English and Arabic language content in various proportions, and bridges between the Arabic and international blogospheres. A similar but considerably smaller region bridges Arabic to French, mainly through Maghrebi (North African) bloggers. Finally, we see a loosely connected region of bloggers from various countries that focus their attention on Islam, and a small group of Egyptian Baha'i.

Across this diversity of nationalities, we found a wide range of perspectives and topics of concern. While there are some notable concentrations of bloggers around particular points of view, such as Egyptian secular activists, Egyptian Muslim Brotherhood members, and Kuwaiti reformists, it is hard to imagine any issue or perspective in the Arab world for which we did not find a least an advocate or two, including a sympathetic view of Israel's struggle with Hamas (though this was indeed rare). We found Islamists, secularists, and avowed atheists. Among the Islamists there were Salafist Sunnis, Twelver Shi'as, and moderate modernizers. Among secularists there were Western-leaning democrats, anti-Western Socialists and Communists, and a healthy dose of Feminists. Some topics of concern, like women's rights and the Israeli/Palestinian struggle, are discussed by large numbers of bloggers across the map. Other topics, like disputes between Sunni and Shi'a, corrupt royals, or parliamentary politics, were more active in national contexts. Still other topics, like gay rights and atheism, appear to have their niches. Perhaps the most interesting thing was the way in which, as we see in the US blogosphere, the identities and attitudes of real people regularly fail to conform to stereotypical expectations. For a start, many Muslim Brotherhood bloggers are women. And outside the Brotherhood, there are women who support hijab and write of their religious devotion, but also defend their right to pursue attractive men rather than wait passively to be chosen. An educated young Lebanese Christian woman defends her nationalist credentials and also her support of Hezbollah. A Saudi blogger criticizes permissive television programming during Ramadan, and yet posts a provocative picture of a woman. A religious blogger adapts Western self-help ideas to promote better personal discipline in following Islam. Finally, while the range of political perspectives is remarkable, it is important to note that the majority of blogs in most parts of the network are not mainly political, but personal journals which touch on politics to varying

degrees. Mostly, they recount personal events, thoughts, and feelings, frequently touching on themes of love, marriage, jobs, and faith, especially the challenge of finding or preserving any of the first three. As we found in a prior study of the Iranian blogosphere, poetry is very common.

Our findings lead us to push back against two common threads of speculation about the role of the Internet in the Arab world. The first is a view of the Internet as primarily a vehicle for radicalization. We found very little support for terrorism or violent jihad in the Arabic blogosphere and quite a lot of criticism. As discussed above, and again later, a more fully articulated view of Internet-based publics is required, which distinguishes between the role of 'public publics' that participate openly in the public sphere and 'private publics' of the like-minded, but it appears that so far support for violent extremism does not thrive in the former. The second thread is the hope that the Internet will empower political movements that can move Arab societies toward democratic values and governance. This study supports some aspects of the view that the Internet can empower political movements in the region, since it provides an infrastructure for expressing minority points of view, breaking gatekeeper monopolies on public voice, lowering barriers to political mobilization (even if symbolic), and building capacity for bottom-up contributions to the public agenda. But we caution against the idea that these functionally 'democratic' characteristics necessarily travel in the company of classically liberal, historically Western, values regarding individual liberties, freedom of belief and expression, and, ultimately, secular foundations of political rights. The Internet lays a good foundation for a battle of ideas, but it does not necessarily favor a winner.

The results of our study lead us to appreciate the work of analysts who have looked closely at the actual role of bloggers in the Arab world, and have staked out important priorities for research. Key issues include:

- The extent to which Arab online publics will organize into meaningful pan-Arab discourse communities versus reinforcing national divisions [Lynch];[5]

- The specific role of online media in political mobilization, public discourse, and political outcomes [Lynch, Isherwood];[6]

- The implications of the Internet for Islamist movements, including the internal politics of Islamist groups, their capacity to mobilize, and their place in the wider public sphere [Ajemian];[7]

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[5] Marc Lynch, "Blogging the New Arab Public."

[6] Ibid, see also Tom Isherwood, "A new direction or more of the same? Political blogging in Egypt," *Arab Media & Society*, Issue 6, (Fall 2008), http://www.arabmediasociety.com/articles/downloads/20080929144105_AMS6_Tom_Isherwood.pdf (accessed May 19, 2009).

[7] Pete Ajemian, "The Islamist opposition online in Egypt and Jordan," *Arab Media & Society*, Issue 4 (Winter 2008), http://www.arabmediasociety.com/topics/index.php?t_article=183 (accessed May 19, 2009) as well as Marc Lynch, "Young Brothers in Cyberspace," *Middle East Report #245*, Winter 2007, available at http://www.merip.org/mer/mer245/lynch.html (accessed May 20, 2009).

- The tension between bloggers serving domestic audiences and 'bridging' internationally [Zuckerman].[8]

We hope that this study will contribute to addressing these and other issues. In the sections that follow, we present our methods for this study, review several sets of findings, and discuss implications and conclusions with an eye toward the importance of Web logs versus other genres of online discourse.

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[8] Ethan Zuckerman, "Meet the Bridgebloggers,"*Public Choice*, January 2008, Vol. 134, Issue 1/2.

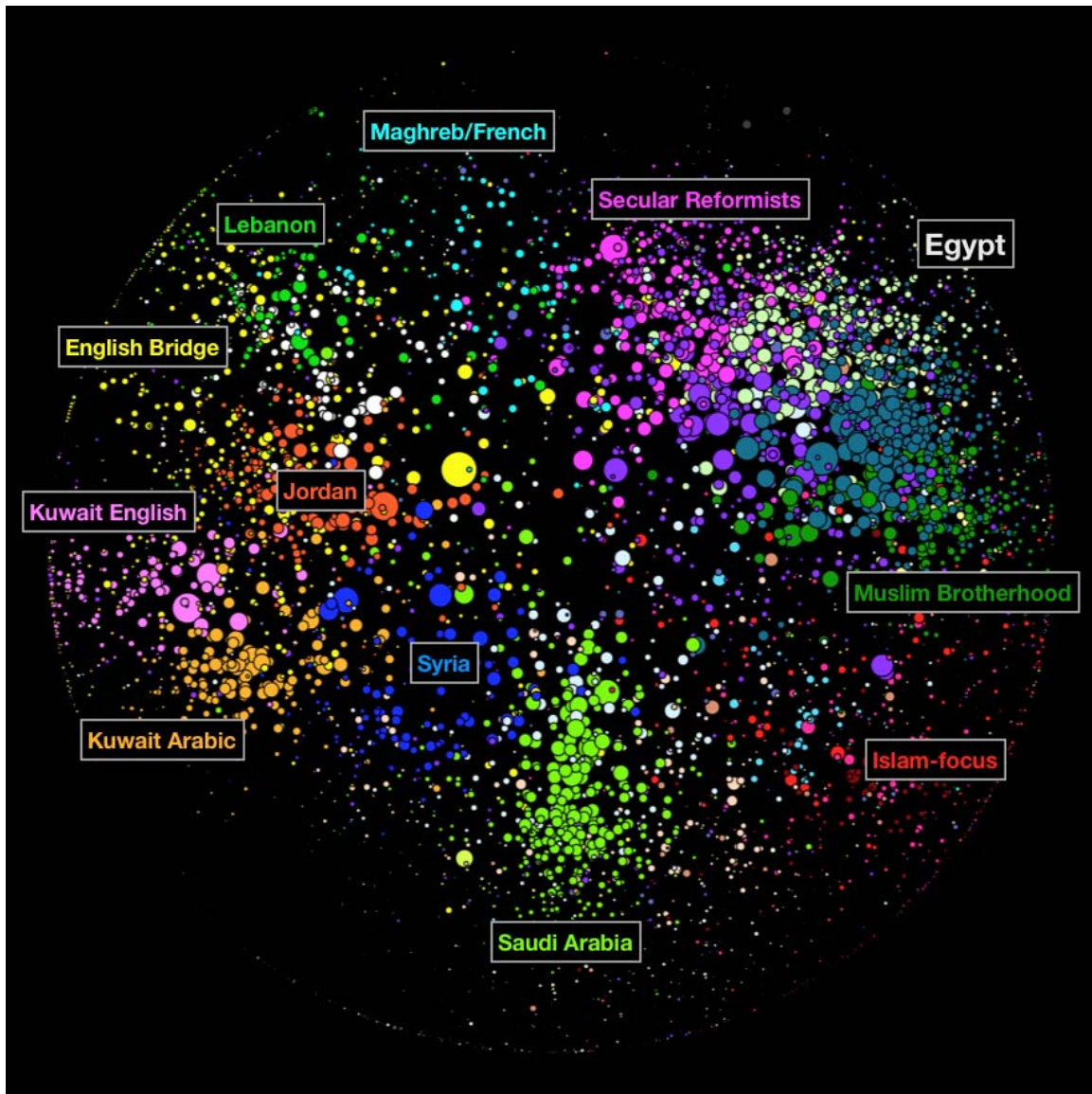## STRUCTURE OF THE NETWORK AND METHODS OVERVIEW

Fig. 1: Map of the Arabic Blogosphere

Adopting similar methods to our study of the Iranian blogosphere, we leveraged content analysis of blogs against a large-scale social network analysis of the Arabic language blogosphere.[9] Figure 1 is a network map of the Arabic blogosphere, in which each dot represents a blog. The size of the dot represents the number of other blogs that link to it, a measure of its popularity. The position of each dot is a function of its links with its neighbors. The diagram is drawn with a Fruchterman-Rheingold 'physics model' algorithm. Imagine that there is a general force trying to push all blogs away from each other, like a

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[9]John Kelly and Bruce Etling, "Mapping Iran's Online Public: Politics and Culture in the Persian Blogosphere," Berkman Center Publication No. 2008-01, April 6, 2008, available at http://cyber.law.harvard.edu/publications/2008/Mapping_Irans_Online_Public (accessed December 6, 2008).

wind blowing them off the map, and that a spring (or force of gravity) pulls together any two blogs that are linked online. Blogs will thus be drawn together by their direct links, but more importantly by the links among their shared neighbors. Thus large groups of blogs cluster up into densely interlinked network neighborhoods. Blogs that share a lot of common neighbors will be close together in the map, even when they do not link directly to one another.

The color of each dot on the map is determined through a different process. A large proportion of the links from blogs are not to other blogs, but to online news sources, organizations, businesses, and various other Internet resources. In some areas of the blogosphere, particularly clusters attentive to news and public affairs, the majority of links are to things other than blogs. On this map, color indicates the assignment of a blog to a particular *attentive cluster*, which is a group of blogs that link to similar online resources. Attentive cluster analysis looks at the full range of online resources linked to by blogs, and groups each blog with others that share a similar linking profile. In blogs, linking to another online resource represents a hard measure of the blogger's attention and serves as the basis for creating attentive clusters, which is accomplished using statistical correlations in linking patterns among bloggers. We see clear patterns in what bloggers are paying attention to across the network. Network neighborhoods and attentive clusters are highly correlated and therefore generally overlap a great deal in network maps. However, it is important to understand that they represent two different things. The first is the direct linking among bloggers, i.e. who is close to whom in the online newsroom, the second is where they are linking to in the Internet at large, i.e. who is looking at the same things, statistically speaking.

The analytic approach of this study is based on the principle that macro structure arises from the tendency of individuals to link more frequently to things they are interested in. This phenomenon is an extension into the blogging world of social behaviors that are well understood in other social scientific contexts. Sociology has an extensive literature on *homophily,* the tendency of social actors to forms ties with similar others.[10] Communications research has identified complex processes of *selective exposure*, by which people choose what media to experience, interpret what is experienced, and remember or forget the experience according to their prior interests and beliefs.[11] Online behavior is conditioned by the user's preferences in conscious and unconscious ways. In the blogosphere, these preferences express themselves as choices about what to read, write about, link to, and comment upon. As Yochai Benkler notes, linking to those you agree or disagree with is at the very core of blogging and is inherently easy in blog platforms. Linking has contributed to a 'show me' culture on the Internet where readers see for themselves the sources of information a blogger has referenced and make their own judgments about the validity of the source. This

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[10] Miller McPherson, Lynn Smith-Lovin, and James M. Cook, "Birds of a Feather: Homophily in Social Networks," *Annual Review of Sociology* 27 (2001): 415-445.

[11] David O. Sears and Jonathan L. Freedman, "Selective exposure to information," *Public Opinion Quarterly* 31 (1967): 194-213; See also D. Frey, "Recent research on selective exposure to information," in *Advances in Experimental Social Psychology, Vol. 19,* ed. L. Berkowitz, (New York: Academic Press, 1986); as well as S.H. Chaffee and Y. Miyo, "Selective exposure and the reinforcement hypothesis: An intergenerational panel study of the 1980 presidential campaign," *Communication Research* 10 (1983): 3-36.

is partly what makes the Internet fundamentally different from the old mass media model, where experts or gatekeepers summarized events, government reports, or research for a mass audience.[12] The social norm among bloggers is to link frequently in one's blog roll and individual posts to influential sources and friends, often with the belief that frequent linking to other bloggers will increase one's visibility in the network. The result of this online linking behavior is a *discourse network*, tractable to empirical research as a massive corpus of text and hyperlinks created by millions of people and stored on thousands of the world's Internet servers. By mapping this network and using the map to view these blogger's communicative activity, we achieve a graphical depiction of the blogosphere that might be described as an fMRI of the social mind.

It is important to note that bloggers that are not linked to frequently by other bloggers are not included in our analysis. In places where state mandated filtering is in effect, linking to certain blogs and sources may increase the likelihood of a blog being blocked, which introduces friction into the link economy. Even in states such as Egypt that seek to inhibit online speech without resorting to filtering, linking to certain blogs and online sources might lead to unwanted attention from government authorities. This may have an impact on the shape of the networked public sphere as represented in this study.

Once the map is created and the network is divided into various attentive clusters, we use text-mining techniques to gain insight into what topics and issues interest each of the clusters. Across the clusters, we analyzed the relative frequencies of bloggers' use of words extracted from all text content, key phrases assembled by the researchers, and known concepts and entities extracted from Arabic language Wikipedia. By looking at which of these were used much more frequently by particular clusters, we are able to make inferences about major topics of concern.

A team of Arabic speaking researchers also conducted exploratory human coding of thousands of blogs to supplement automated techniques and to provide more qualitative assessment of Arabic blogs. Coders were asked to try to ascertain basic demographic data about bloggers (age, location, etc.) as well as blogger opinions on political, cultural, and religious topics. Finally, bloggers provided a short text description of what was unique or stood out about each blogger.[13]

RESULTS: NETWORK MAP OVERVIEW

Several interesting structural features are apparent in the network. First, the Arabic blogosphere manifests several large national clusters. Egypt is by far the largest structural group, and contains several attentive clusters within it. Saudi Arabia and Kuwait also have large, distinct national blogospheres. Beyond these, we continue to find attentive clusters for a number of countries, but many of these, principally the Levant countries, meld into a larger grouping in which we find mixed Arabic and English blogging. This region forms a 'bridge' to the international English language blogosphere, including American blogs. Some national bloggers (like Iraqis) are merged almost completely into the bridge, while others (like Lebanese) have more national coherence. The Syrians are unusual in that some of them,

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[12] Yochai Benkler, *The Wealth of Networks*, 216-219.
[13] See Appendix A for additional information on the methodology.

often blogging in English, merge into the bridge, while others, blogging in Arabic, connect up with the Saudis. Two additional features complete the picture. First, a number of Maghrebi (North African) bloggers connect in a Francophone mirror of the English bridge. Bloggers in the French bridge mix Arabic and French, and link frequently to French Web sites. Lastly, there is a loosely connected, multinational group of bloggers focused on religion, predominantly Islam, though the religion zone also contains a small cluster of Baha'i bloggers as well. The religion zone contains several attentive clusters, mainly reflecting choice of blog hosting service. One religion-focused cluster however contains mainly Islam-oriented Maghrebis, some of whom specifically oppose the use of French by other Magrebi bloggers. Another contains conservative Islamic bloggers focused much more on theology, interpretation of the Qu'ran, and criticism of other faiths. At the end of the cluster descriptions we have also included comments on various blogs made by the coders to provide a more qualitative interpretation of bloggers in each cluster.

CLUSTER DESCRIPTIONS

In this section, we provide the results of various analyses used to interpret the Arabic blogosphere map and the various attentive clusters found in it.

Egypt

Egyptian bloggers comprise the largest structural cluster in the Arabic blogosphere, undoubtedly in part because Egypt has a large online population, and the largest population of any Arab country. Marc Lynch argues that Egypt has some of the most active political bloggers in the Arab public sphere, that is, bloggers who are connected to political movements and are actively engaged in politics, instead of merely discussing politics.[14] Our findings seem to support this argument, especially in the Secular Reformist and Muslim Brotherhood clusters. Egyptian bloggers frequently use pictorial badges on their sites to show support for various campaigns, such as for freeing bloggers, calling for reform, or promoting social issues such as combating HIV/AIDS stigmas. And some of these campaigns, like 'Stop the Imprecations,'[15] organize some groups of bloggers against others. In fact, Egypt is the one national groupings where we see evidence of the kind of large-scale political clustering found in the United States and some other politically active blogospheres (Iran, for instance). Egyptian bloggers comprise nearly one-third of those in our map and form a large structural cluster that contains several attentive clusters, including Secular Reformist, Wider Opposition, Egyptian Youth, Egyptian Islamic, and Muslim Brotherhood.

Secular Reformist

This cluster contains strong political discourse, and consists of bloggers who are critical of Egyptian President Hosni Mubarak and his government. For example, it features a number of bloggers from the loose-knit Kefaya ('Enough') political movement, which is opposed to the president and his plans to install his son as future president of Egypt. Tom Isherwood argues that most influential political bloggers in Egypt got their start as part of the Kefaya

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[14] Marc Lynch, "Blogging the New Arab Public." For a broader discussion of Internet development and use in Egypt see also Rasha A. Abdulla, *The Internet in the Arab World: Egypt and Beyond* (New York: Peter Lang, 2007), 45-60.

[15] 'Stop the Imprecations' is a campaign by some, more conservative bloggers, to discourage the use of profanity and impious slang by liberal bloggers.

movement and that the movement, and the 2005 presidential elections in Egypt more generally, propelled Egyptian bloggers from obscurity to the heart of the new Arab public sphere.[16] These bloggers' perspectives are typically secular, and many bloggers have Socialist, some even Marxist, sympathies. This cluster also skews slightly older than other Egyptian sub-clusters, with most of its bloggers (49%) in the 25-35 age range. Some coder text descriptions:

- *This blog is overtly political: At the top it reads in scrolling text: "I blog for freedom. Say no to Mubarak. Say no to Al Ikhwan [the Muslim Brotherhood]." Every entry is related to some political/social issue - often long essays. The author's viewpoint is secular (though not anti-religious): he heavily criticizes both the government and political Islam, favors democracy and freedom of choice (with regard to the hijab for instance). For him, Muslim society once embraced philosophy and free inquiry, but that heritage has been lost.*

- *This is the blog of an Egyptian member of Kefaya, the secular opposition. In addition to politics, he writes a lot about computer programming, endorsing different kinds of software. He also writes about soccer and the plight of the Palestinians.*

- *This blogger chose to adopt the name of a poet from ancient Egypt, an indication perhaps that his identity harkens back to a pre-Islamic Egypt. The blog is decidedly left-leaning, with the blogger practically eulogizing a figure on the left and a member of the Egyptian Communist party for his dedication to social justice. There is a striking interest in art (film and poetry) that has a political dimension and is engaged with the plight of the downtrodden majority*

- *This is the blog of an Egyptian computer programmer and a Coptic Christian. He writes a lot about the dangers Christians face not just in Egypt, but also around the entire Middle East. He condemns jihadist groups and urges dialogue and understanding.*

Wider Opposition

This cluster is very similar to Secular Reformist in most respects, but contains more bloggers discussing the 'Tomorrow' party, appears to have more expressly leftist and pan-Arab bloggers. It also includes bloggers from other countries writing on similar themes (that are also linking to the same kinds of online resources). It includes some bloggers who deal with AIDS and gay rights.

- *The personal blog of a self identified "Arab Muslim, pan-Arabist, Nasserist revolutionary." The blog posts are mostly about historical events that took place during Nasser's reign, usually during the Six-Day War or the Suez Canal crisis. The blog includes many pictures of memorabilia from that time including postage stamps, currency notes, and newspaper headlines. A smaller portion of posts are political posts on modern events, especially about the Palestinian situation, and at times some local Egyptian protests or strikes.*

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[16] Tom Isherwood, "A new direction or more of the same? Political blogging in Egypt," *Arab Media & Society*, Issue 6, (Fall 2008),
http://www.arabmediasociety.com/articles/downloads/20080929144105_AMS6_Tom_Isherwood.pdf
(accessed May 19, 2009).

- *This is the blog of an Egyptian woman who is a liberal opponent of Mubarak, bitterly criticizing him as a "dictator." She also laments the rise of the Islamist opposition in the form of the Muslim Brotherhood, admitting that it is stronger than liberal opposition parties, but wishing that it were not the case. She also labels the incident in spring 2008, when Hamas blew up the wall with Egypt so that residents from Gaza could buy supplies, "the Hamas occupation of Egypt."*

- *This is an Egyptian opposition blog. It advertises protests, demands the freedom of political prisoners (including both secular leftists and Muslim Brothers), and documents the excesses of the Mubarak government. It calls for tolerance and cooperation among Egyptians of different religious and political backgrounds in order to unite against the government.*

- *This is the blog of a young Egyptian who writes knowledgeably about arts, culture, politics, and social issues. He writes a great deal about the cultural scene in Cairo, but also about everything from Algerian politics to AIDS awareness. His stance on AIDS awareness is particularly interesting in a society that largely considers it taboo.*

- *This is the blog of a gay Jordanian man who writes frankly about his homosexuality, discussing his sexual flings with various men. He writes in support of tolerance for gay people, remaining anonymous for obvious reasons, as such views are very out of line in mainstream Arab discourse.*

Egyptian Youth

Almost half of the bloggers are women, one of the highest percentages of female bloggers in any cluster of the entire Arabic blogosphere.[17] It is also one of the youngest, with half of bloggers in the 18-24 year old range. This group talks more about single life and family life than any other cluster. Among specific political issues discussed in this cluster, support for Palestine is proportionally higher than other clusters. Among cultural issues, bloggers in this cluster discuss poetry, literature, and art often, as well as human rights (by which we mean civil and political rights: freedom of speech, assembly, etc.) Women's issues (rights, status, hijab, feminism, etc.) are much more important to this cluster than to the others (17% compared to a range of 6–9% in the other Egyptian clusters). This cluster also features significantly more bloggers expressing support of Western culture and values than other Egyptian clusters (14% compared to 1–7% in other Egyptian clusters).

The following are descriptions of several blogs indicative of this cluster written by researchers who contributed to this study.

- *This is the blog of an Egyptian who writes a lot about his pride in Egypt's ancient civilization. He also takes on modern politics, criticizing the idea of Egypt moving towards a nuclear program as unhelpful and dangerous, and calling for disarmament throughout the Middle East, including in Iran and Israel.*

- *The blogger writes on a number of different topics, including her emotions, family, politics, and women's issues. She also posts her poetry. All of her writing has a secular and feminist outlook, criticizing radical Islam and the repression of women.*

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[17] This estimate is based on the judgments of researchers reading individual blogs and does not include those blogs for which the gender of the blogger was not apparent to the researchers.

- *This is the blog of a young Cairene who writes about film, music, and how much he likes sitting in cafes and drinking coffee. He also touches on politics, criticizing the imprisonment of opposition leader Ayman Nour and the tactics of the security forces.*

- *A young Egyptian's personal blog. Posts vary from very personal ones about her love life and some poetry, to political posts about the government. She seems slightly conservative. She mostly discusses life at her college (she is a teacher's assistant), the political issues they have with the government, and her love life. She is anti-government and dictatorship. She seems to be a central part of an online community, judging from the very large number of comments and amount of discussion.*

Egyptian Islamic

This cluster is focused primarily on the discussion of Islam, similar to bloggers who discuss religion in the Islamic Discourse cluster of the map. These bloggers write primarily about their personal religious thoughts, how Islam fits into their daily lives, how to be better Muslims, and, to a lesser but still significant degree, the Qur'an and Islamic interpretation. Bloggers here occasionally delve into politics and begin to intermingle with the Muslim Brotherhood cluster, which is adjacent on the network map. Some key terms used by these bloggers include general terms related to Egypt, such as Port Said, El Alamein, Adel Hammouda (Editor of the Egyptian newspaper El Fagr), as well as more specific religious terms, Sa'id ibn Jubayr (an Islamic scholar), and religious holidays (Mawlid). Coder comments for this cluster:

- *This blog is largely about religion. The blogger is a devout Muslim, and is well-educated about the intricacies of the faith. He writes some devotional pieces that read like prayers, but also more analytical pieces about Islamic schools of thought and differences between Sunnis and Shi'as.*

- *This blog is about religious issues and choices of behavior, dress, talk, work, etc. It focuses on two things: sanctity of productive work and strong belief in and practice of Islam.*

- *This is the blog of an Egyptian doctor who writes political analysis and about religion. For example, he writes in a non-partisan tone about the recent strikes in the country, discussing what went well while also arguing that change cannot be made through Internet-based activism alone. He also writes about religion a great deal, urging people to read the Qur'an and providing a link for people to listen to readings from it.*

- *This blog is written by a young Egyptian calling himself 'Future Preacher,' and the blog is an entirely spiritual outlet with Qur'anic verses and devotional pieces. It appears to be apolitical, and just devoutly religious.*

- *This is blog of a young Egyptian woman that is devoted to her religious faith. She writes a lot about what she sees as the miracle of the Qur'an. Her site is mostly apolitical in its content, focusing just on preaching, but she also links to Muslim Brotherhood blogs and writes about the suffering of Muslims in Bosnia and Chechnya.*

Muslim Brotherhood

The Muslim Brotherhood has an active online presence, and forms a distinct sub-cluster in the Egyptian part of the map.[18] Despite the fact that the group is technically illegal in Egypt, and that members, including bloggers, are often arrested, members of this cluster are still more likely to blog using their name, rather than anonymously or under an obvious pseudonym. In fact, 78% use their name when blogging, more than any other cluster in the Arabic blogosphere. The Muslim Brotherhood cluster is also more concerned with human rights (41%) than any other group of bloggers on the map. Additionally, 70% of this group is male, one of the higher gender imbalances on the map. This group prefers terms specific to the movement like Ikhwan (brotherhood or Muslim Brotherhood) and Hassan Al Banna (founder of the Muslim Brotherhood), but also terms related to Gaza and the Palestinian conflict.

Researcher comments:

- *A blog run by a member of the Muslim Brotherhood that basically documents and publishes news about Muslim Brotherhood detainees. It is very anti-government and anti-Mubarak, and focuses mostly on the detainment of many leaders of the Brotherhood in mid-2007 and the use of military tribunals as opposed to civil courts in their cases.*

- *This is the blog of a prominent Muslim Brotherhood activist. He champions the Brotherhood's cause in Egypt, but also uses his blog to challenge the Brotherhood leadership, urging them to take a more politically active stance and reach out to the secular opposition.*

- *Blogger discusses religion, religious issues, and beliefs, mixed with philosophy. This blogger posts links to Muslim converts from different countries in North America and Europe.*

- *The blogger is very interested in how Islamist movements can spread influence culturally and resist Western missionary activity, which he sees as being inseparable from Western imperial ambitions. Feminist thinking and so forth are viewed as Western ideologies intended to capture minds and destroy Islam from within.*

Levantine/English Bridge

This region features a combination of bloggers from the countries of the eastern Mediterranean referred to historically as the Levant, including Lebanese, Jordanians, and Palestinians. They are joined in this section of the network, which connects to the United States and international blogosphere, by 'bridge bloggers' from other countries, who write in English. There is no hard division in the network between English and Arabic blogs, and

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[18] For a discussion of the Muslim Brotherhood's online activities see Pete Ajemian, "The Islamist opposition online in Egypt and Jordan," *Arab Media & Society*, Issue 4 (Winter 2008), http://www.arabmediasociety.com/topics/index.php?t_article=183 (accessed May 19, 2009) as well as Marc Lynch, "Young Brothers in Cyberspace," *Middle East Report #245*, Winter 2007, available at http://www.merip.org/mer/mer245/lynch.html (accessed May 20, 2009). For a general overview of the Muslim Brotherhood, its transformation over time, and misunderstanding in the West see Juan Cole, *Engaging the Muslim World* (New York: Palgrave Macmillan, 2009), 41-82, and Mona El-Ghobashy, "The Metamorphosis of the Egyptian Muslim Brothers," *International Journal of Middle East Studies* 37/3 (August 2005).

many of the bloggers mix the two languages in various proportions.   The region includes several different attentive clusters, including English Bridge, Jordan, and Lebanon. The English Bridge area also includes most Iraqi bloggers, who appear here instead of in their own national cluster, perhaps because their dense connections with US think tanks, journalists, and partisan political bloggers overwhelm those that would arise from serving a domestic Iraqi audience. This is also where the international bridge blogging network Global Voices is found.

English Bridge

While still consisting mainly of bloggers living in the Middle East, this sub-cluster has more expatriates than most (16.7%). They appear to be tied together more by their linguistic choices than any demographic or national connections. However, they are very political and discuss international news as much as local affairs, with strong attention to human rights, women's rights, and Western culture and values, which they mainly support. They are also the most active critics of the United States of any cluster on the map (18.8%), though they are one of its biggest defenders as well (7.1%). A number of American blogs link to this bridge cluster, which includes Iraqi bloggers who write in English, as well as bridge blogging communities like Global Voices and MidEastYouth.com. Because they are the main link between the Arabic and international blogospheres, perhaps it is to be expected that we see the most discussion of issues of concern to the West within the bridge.

Terms used by this group include: place names in Iraq (Basra), Amnesty International, the United States, United Kingdom, Bahrain, Oman, and women's rights. Key outlinks include English language news sites (New York Times, BBC, The Guardian, Al Jazeera English) and several major Iraqi bloggers.

Researcher comments:

- *A group blog by young writers who view themselves as avant garde. One entry deals with walking in urban space for women, the kinds of encounters that produces, and what that says about the political culture in contemporary Egypt. The site is highly secular, very critical of those who view Islam as the solution for the current quandary, and highly skeptical about the compatibility of this kind of thinking with democracy.*

- *The blogger is a Syrian dissident who seems quite aware of what is happening in American politics and in Middle Eastern struggles for regional power, and he is vehemently opposed to the Syrian ruling family. He is a strong advocate for political reform within Syria and would be happy to see the Syrian regime go.... He seems attuned to the policies of the neo-cons, in the sense that he believes democracy must come to the region, though he doesn't seem terribly enamored of the intelligence of those advocating such policies that merely strengthen Syria, Iran, and Hezbollah.*

- *This blogger seems to have much experience with traveling around the world and now is settled in Bahrain, her home country. She is critical and somewhat sarcastic of the role of the Arabic language, especially in education, and recently discusses how leaders in her country consider everything in Arabic to be related to Islam. She also discusses Western poetry, literature, and film, and the complexity of living in Bahrain;*

- *The blog includes discussions and news about the current situation in Iraq: Five years after the United States occupied Iraq with the stated goal of bringing democracy to its people, the war has essentially ruined the country's economy, society, and sovereignty;*

- *The blog is in English and deals with a Sudanese's thoughts and ideas on international and national issues.*

- *This is the blog of a Syrian studying in Japan who writes mostly in English with a little Arabic. He writes fondly about his childhood in Lattakia, adjusting to Japanese culture, the global presence of Islam, and campaigns for the freedom of a Syrian blogger who was jailed for posting comments that the regime found objectionable.*

Lebanon

Lebanese bloggers form a distinctive sub-cluster within the broader Levant/Bridge region of the map.[19] This group writes in English, Arabic, and occasionally French. Although a minority, this cluster also includes bloggers from Palestine. Topics range from political issues in both Lebanon and Palestine to photography, poetry, medicine, and personal, diary-type reflections. Domestic leaders are widely criticized (51.6%), but also supported (29.0%), indicating a robust attention to national politics. Religion appears to be discussed less often, almost exclusively in terms of personal thoughts and reflections. Western culture and value are discussed widely, supported and criticized in equal measure (~32% each). Key online resources for this group include Lebanon-focused news sites, blogs, and political party sites (Free Democratic Movement Party), in Arabic and English. Terms preferred by this group reveal an interest in international, domestic, and Palestinian policy: military, America, Iran, Israel, Palestine, and Obama.

Researcher comments:

- *This is the blog of young Lebanese woman, who is a Christian and a supporter of the Free Patriotic Movement, the Lebanese Christian faction that is allied with Hezbollah. She jokes that she supported the "evil Syrian-Iranian axis" by voting for the party. She defends the nationalist credentials of the movement, and devotes many posts to justifying her support for the Hezbollah-aligned movement as a Christian.*

- *A political blog. Keep the voices of the Lebanese and those who visited Lebanon recently loud and clear. NO TO WAR AGAIN. NO TO OCCUPATION. NO TO TERRORISM. For the land of milk and honey, Lebanese Youth Call on US to Respect Democracy.*

- *This is the blog of a Palestinian living in France. He writes mostly about the Palestinians, decrying their conditions in refugee camps, in exile, and under occupation. He also writes a little about the situation of Arabs and minorities in France.*

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[19] For discussion of Lebanese political blogs see Sune Haugbolle, "From A-list to webtifadas: Developments in the Lebanese blogosphere 2005-2006," *Arab Media & Society*, 1, Spring 2007, http://www.arabmediasociety.com/?article=40, accessed May 19, 2009.

- *A blog of a Lebanese doctor. All of his posts are exclusively self-authored poems. Many of his poems are nature poems. He uses the family and romantic relationships as metaphors for his relationship with nature. Other poems are about love.*

- *The blog of a young Lebanese woman who writes about looking for love and trying to find the right man. She also posts a lot about herself, expressing a great deal of self-confidence, but also complaining of daily frustrations.*

- *This Lebanese blogger works as a translator, and keeps a mainly personal blog. One post also deals with the time when downtown Beirut was closed off due to a long demonstration - however, once again, the blogger simply discusses the personal experience (i.e. not being able to go to work, etc.) rather than taking any political stand.*

Jordan

This cluster contains mainly Jordanians, but also some Palestinians. It has the highest proportion of women in the Levantine/English Bridge group. Female bloggers comprise 40.2%, 30.2%, and 33% of the Jordanian, Lebanese, and English Bridge clusters, respectively. Women's issues are more widely talked about here than any other cluster (54.2% vs. 19.1% across the map). Jordanian bloggers are less critical of domestic leaders than Lebanese (29.2% vs. 51.6%), probably reflecting Lebanon's more democratic system. Bloggers in this cluster use the word 'Palestine' more frequently than any other cluster, and 'Nakba' (1948 Palestinian exodus) more frequently than all but the Egyptian Religious cluster.

Researcher comments:

- *This blogger is critical of how political activism is conducted (related to Gaza, for example) and wishes it was more focused and directed. Like many secular Arabs, she seems frustrated by the narrow range of options available. The Islamists are passionate and highly organized, and other options, tribal and secular forces, are self-absorbed and somewhat indifferent to politics.*

- *The blogger sees herself as combination of Muslim and traditional Circassian.[20] Her blog includes English and Arabic entries. She expresses her support for the Ossetians, whom she feels have suffered unjustly at the hands of the Georgians.*

- *This is the blog of an Arab-Israeli girl, a Palestinian who is living in Jerusalem where she is a student. She writes a bit about her life, but mostly about her country and her Palestinian identity, focusing a lot on historical injustices and indignities suffered by her people.*

- *This blog, by a Jordanian, is almost entirely in English with just a few items in Arabic. He writes mostly about Palestine, commemorating the Nakba and condemning the Israeli occupation. He also writes about soccer.*

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[20] A minority group, originally from the Caucasus, many of whom settled in the Levant in the 19th Century.

- *This is the blog of a Syrian living in Jordan who writes humorous posts about his life, which he considers to be absurd. On more serious notes, he promotes his businesses in Jordan and writes about life back in his native country. He writes in English more frequently than Arabic.*

Maghreb/French Bridge

The Maghreb is a term used to refer to the region of North Africa that includes Morocco, Algeria, and Tunisia. [21] This cluster of the network contains North African bloggers, many with secular outlooks, using combinations of French and Arabic, and also bridges to French-language sources. Another cluster, described later, contains a number of more religious Maghrebi bloggers writing exclusively in Arabic. The Maghreb/French Bridge cluster is overwhelmingly male (almost 90%). In terms of political topics, this cluster is similar to the map at large: critical of domestic leaders, terrorism, and foreign leaders, while supportive of Palestine. Among the discussions that focus on topics of culture and values, this cluster calls attention to human rights more than any other topic, although poetry, art, and literature are also important. It also features slightly older bloggers on average than those of other clusters. It is also one of the few clusters with more anonymous authors than those using their name (51.3% to 48.7%), and contains a relatively high proportion of expatriates (17.2%).

Researcher comments:

- *This (Tunisian) blogger is very interested in the collective fate of countries in the region. He critiques what he calls a culture of fear that seems to be paralyzing it. He sees this fear holding the culture back and traces it to various aspects of life, including child rearing. One might say he is making a plea for courage and a gradual rebuilding of self-esteem for a culture that has lost its sense of self. The blogger also deals with the polarization that is beginning to occur between the faithful and the secular, making a plea for the modernization of Sharia.*

- *This is a blog by a middle-aged Tunisian woman who writes about striking a balance between Islam and civil society. She argues passionately in defense of her Islamic faith and makes it clear that she works to follow its laws, but she nonetheless calls for a civil state with a separation between civil law and religious law.*

- *This is the blog of a Tunisian who writes about his personal life and being in love, but also about more politically-charged topics. He rails against the legacy of colonialism and European political influence in North Africa, and also writes about domestic politics (especially as it relates to the Internet and press freedom) in Tunisia.*

- *This blogger is a Tunisian man living in Belgium who writes about personal topics often, sometimes writing open letters to his father. He also writes some about the experience of being a Muslim in Europe, defending his faith in what he feels is an Islamophobic climate.*

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[21] For a discussion of blogging in Morocco see Aziz Douai, "Offline Politics in the Arabic blogosphere: Trends and Prospects in Morocco," in *International Blogging: Identity, Politics, and Networked Publics*, eds. Adrienne Russell and Nabil Echchaibi (New York: Peter Lang, 2009) 133-149. The plight of Tunisian bloggers, which rarely discuss political issues, is also discussed by Marc Lynch, "Blogging the New Arab Public."

- *This is the blog of a Tunisian man who is critical of police brutality in the country and of the government in general. He also takes a very liberal stance on issues, and condemns Islamist movements in North Africa, accusing them of brainwashing young people.*

- *This blogger is militantly secular. He seems to have been actively involved in a global day against the hijab (veil), which he sees as being representative of backward Salafi thinking, including the myriad dangers of takfir (calling violence upon apostates).*

Saudi Arabia

This cluster devotes far less attention to domestic political leaders than other clusters, both in terms of support and criticism.[22] This group writes primarily in a personal diary format, even more than other clusters. Automated term frequency analysis shows a preference for technology and fewer mentions of political terms or personalities.[23] At 46%, this cluster has more female bloggers than most other clusters. While still a small minority, it also has more expatriates than other clusters. There were several posts that argued for the release of a jailed Saudi blogger, Fouad al-Farhan, who was arrested for the writing on his blog but eventually released.

Researcher comments:

- *Identifying himself as 'The Philosopher,' this blogger takes on political issues concerning the Arab world as a whole. He is critical of his native Saudi government, including for its recent imprisonment of a fellow Saudi blogger. He also condemns the American and Israeli positions in the Middle East.*

- *A personal blog of a Western Saudi Arabian college student. She blogs about her life at the college and her interests, but not much beyond her daily activities and problems. She has some insightful posters on the blog. One is against drugs, while another protests against Arabic Wikipedia articles defaming the prophet. Also, she has one rare political poster that is very critical of Hezbollah.*

- *This is the blog of a young Saudi woman who writes about her thoughts, friends, dreams, and her prospects for a university education. She also writes Islam and her faith in God.*

- *Blogger is either attempting to expose the status of women in Saudi Arabia or just seems to be concerned with her own state of happiness.*

- *This is a personal blog, for the most part on religious subjects and issues dealing with the challenges facing the Arab and Muslim world. This blogger also discusses purely personal issues as well as enthusiasm for computers and technology.*

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[22] This finding on the Saudi blogosphere is supported by Marc Lynch when he writes, "In Egypt, Bahrain, and Kuwait, for example, bloggers have played a key role in mobilizing contentious politics. Other Arabic blogospheres, such as Jordan and Saudi Arabia, remain more on the political sidelines, although they have increasingly taken note of the exploits of their activist peers." Marc Lynch, "Blogging the New Arab Public."

[23] Top terms relative to other clusters include: technology, WordPress, computer programming, Flicker, Twitter, and Microsoft.

- *This is the blog of a Saudi woman who writes mostly about cultural issues, including Islam and modernity and relations between the sexes in the kingdom. She also defends Fouad Al Farhan, a political blogger who had been jailed by Saudi authorities.*

- *This is the blog of a young Saudi economics student who writes almost exclusively about new computer software, his apparent passion.*

- *This is the blog of a Saudi, originally from Jiddah, studying in Tampa, Florida. He writes mostly about technology, hawking new computer and mobile phone products. He also writes about films, his faith in Islam, and speaks out in support of bloggers' rights in his native Saudi Arabia.*

- *This is the blog of a Saudi man who writes about his life and about politics. He writes in support of the Palestinians and against the US occupation of Iraq, and he also complains about some domestic issues, such as what he considers to be poor medical services available in Riyadh.*

Syria

Bloggers in this group are located almost exclusively in Syria and write primarily about domestic issues, including politics. Syrians are among the least likely to express support for domestic political leaders compared to other clusters. This cluster's discussion of religion is dedicated predominately to personal religious thoughts and experiences, as well as religious poetry and Sunni Islam. This cluster has the second largest concentration of known male bloggers on the map, at 87%, while only 13% are female. Half of all bloggers in this cluster are in the 25-35 age range, making it slightly older than other clusters and the blogosphere on whole, but not by much. Coders found that this group was more critical of western culture and values than other clusters and one of the least likely to discuss movies and television.

Below are coder comments about blogs in this cluster:

- *This is the blog of a young Syrian who is interested in politics and technology. He writes mostly about world and regional politics, criticizing the United States, the House of Saud, and Israeli policy in Gaza. However, he also criticizes the Syrian government's decision to put a blogger in jail, which reflects both the way in which political blogging is dangerous in Syria, but also the way blogging is one of the few avenues to offer any criticism of the regime in the country.*

- *This is the blog of a Syrian student who writes lovingly about Damascus. He devotes much of his blog to writing about life in the city, his studies, and his support for the Palestinian cause.*

- *This is the blog of a Syrian liberal dissident now living in the United States. He urges the release of Syrian dissidents in jails, call for democracy and reform in Syria, and supports secular liberal around the Arab world. He is also very critical of the Israel and, to a lesser extent, the United States, considering them obstacles to Arab democracy.*

- *This is the blog of a young Syrian man who writes about his daily emotions, including joy and sadness. His blog is mostly personal and not political, but he asks what the effects of the struggles in Palestine and Iraq have on Arab culture and group consciousness.*

- *This is the blog of a Syrian student who writes personal things about his own life but also political pieces. On politics, he goes about as far as a blogger in Syria can go without getting arrested, denouncing corruption in Syria and calling for greater Internet freedom and less censorship. He never directly takes on President Assad or specific government figures, which is probably what keeps him out of jail.*

Kuwait[24]

This cluster consists of Kuwaiti bloggers, and is split between two sub-clusters, one that prefers English and the other that prefers Arabic.

Kuwaiti English

Bloggers in this sub-cluster prefer English language sources and also often write in English. This group includes a number of Kuwaiti expatriates as well as foreigners living in Kuwait who write in English. They are more likely to write anonymously than to use their name, and are more likely to be male than female compared to Arabic bloggers. This group is also older than their Arab counterparts, with 77% of them in the 25-35 year old age range. They discuss international news and policy, economic issues, ethnic minority issues, and women's issues more often than Kuwaiti Arabic bloggers. This group also talks more about family life and single life than their Arabic counterparts in Kuwait. This group is also more likely to be supportive of Western culture and values and more inclined to write about technology, human rights, poetry, literature, and art than Arabic speaking Kuwaitis. Kuwaiti English bloggers are also much more likely to be critical of terrorism, less likely to support Palestine, less likely to express support for domestic political leaders, and more likely to criticize foreign political leaders than their Arabic counterparts.

Here are some representative coder descriptions of blogs in this sub-cluster:

- *This blog if written by three liberal, pro-democracy Kuwaitis. They are all young men with an average age of about 26, and they post items about protests and the struggle for reform in the monarchy. They are critical of the government, and secular in their outlook.*

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[24] Kuwaiti bloggers are among the more politically active in the region according to Marc Lynch, and gained an audience during the 2006 succession crisis following the death of the Emir. Bloggers then entered the debate on reducing the number of electoral districts to cut back on corrupt electoral practices and jumped into the Parliamentary elections with a vengeance in 2006. Marc Lynch, "Blogging the New Arab Public;" see also Mary Ann Tetrault, "Kuwait Annus Mirabilis" September 7, 2006 http://www.merip.org/mero/mero090706.html. For an alternative view see Deborah Wheeler, who argues that political use of the Internet in Kuwait is constrained, economic use is latent, and the Internet will not necessarily lead to enhancements of personal freedom and power in Kuwait: Deborah L. Wheeler, *The Internet in the Middle East: Global Expectations and Local Imaginations in Kuwait* (Albany: State University of New York Press, 2006) 61-103.

- *This is the blog of a Kuwaiti with a philosophical bent who writes poetry and long analytical posts that address complex topics like keeping Kuwait's Muslim identity in an age of globalization. He also writes about the country's partial democratization process.*

- *This is the blog of a Kuwaiti who writes about historical topics, such as old books he finds. He also writes a little about Arab politics and art.*

- *The blogger is focused on Kuwaiti politics, domestic issues, and public affairs, sometimes using sarcasm and jokes to comment on internal affairs.*

- *The blog is in English and deals with women's issues regarding family life, pregnancy, knitting, taking care of the baby, etc.*

Kuwaiti Arabic

This group of bloggers primarily writes in Arabic and prefers Arabic language sources. They are located predominately inside Kuwait and are more likely than Kuwaiti English bloggers to use their name when writing, although the majority of Kuwaiti bloggers in both clusters write anonymously. This sub-cluster is younger and has more females than their English counterparts, but the majorities in both sub-clusters are male. In terms of topical issues, Kuwaiti Arabic bloggers are far more likely to discuss domestic news and Islam (including the Qur'an, theology, history, and Sunni thought and practice) than Kuwaiti English bloggers. Automated term frequency analysis shows that Kuwaiti Arabic bloggers are much more likely than their English speaking counterparts to discuss political issues, and indeed use political names and terms more than most other clusters in the Arabic blogosphere. Nearly all top terms were related to top Kuwaiti politicians or those that figure prominently in recent political debates.[25] Coding results reveal that among specific political topics this group is more likely to support domestic political leaders, more likely to be critical of Israel, and more likely to support Palestine than the Kuwaiti English sub-cluster. This group also talks more about pop culture topics (movies, TV, and music) than their English counterparts.

Coder comments from the Kuwaiti Arabic cluster:

- *A blog about Kuwait domestic affairs and increasing tensions between Islamists and Liberals.*

- *A Kuwaiti liberal who blasts corruption in the monarchy and urges people to vote for reformers in parliamentary elections. He also celebrates the execution of Saddam Hussein.*

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[25] Top terms (individuals) included: Faisal Al-Muslim Al-Otaib, Saleh Al-Mulla, Ali Al-Rashid and Mohammed Hayef Al-Mutairi.

- *A Kuwaiti liberal who is critical of his government but seeks to improve it and reform it from within. He highlights news stories about problems in Kuwait and mistakes the government has made, writing that he hopes to see things improve.*

- *This blogger writes about Kuwaiti politics, chronicling the push for liberalization and reforms in the country. She is clearly supportive of reform, with banners on her blog calling for greater free speech and constitutional rights. She is also somewhat critical of the West.*

- *This is the blog of a Kuwaiti woman which is interesting for her two main focuses-- Islam and men. She sees no apparent contradiction between her faith, which she writes frequently about, and her desire to meet men and date.*

- *This is the blog of a Kuwaiti who posts random thoughts about God and religion. He is a devout Muslim and many of posts simply praise God and Muhammad.*

- *This is the blog of an educated Kuwaiti man who writes about the effect of high oil prices on the kingdom's economy, as well as legislation in the parliament and the slow reform movement towards more democracy.*

- *This is the blog of a Kuwaiti woman that mixes the personal and political, with posts about her search for love interspersed with posts complaining about rising bread prices in the monarchy and criticism of Shi'a Kuwaitis who use supporting Hezbollah as a cloak for sectarianism, urging an end to sectarian agitation in Kuwait.*

Islam Focus

In the corner of the map opposite the English Bridge, we find a region with several attentive clusters of religious bloggers focused on Islam. This region connects more closely with the religious side of the Egyptian blogosphere, and with the Saudi cluster. Two attentive sub-clusters stand out, Islamic Discourse, which prioritizes religious interpretation, and Arabic Maghreb, which contains bloggers who are mainly from the Maghreb (along with some from Egypt, including Muslim Brotherhood members) who write entirely in Arabic, sometimes criticizing those who write in French. A lot of bloggers in this region use the Maktoob blog service, which seems popular with more religious bloggers.

Islamic Discourse

This group is focused primarily on discussion of Islam, including interpretation, personal religious thoughts, and daily application of Islam, teachings, fatwas and so forth.[26] Sixty-eight percent of bloggers in this cluster discuss the more theological aspects of Islam, the highest proportion in the map (the second highest cluster, Egyptian Islamic, is still only

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[26] There are a number of sources that discuss the use of the Internet for Islamic discourse and interpretation including: Gary Bunt, *iMuslims: Rewiring the House of Islam* (Chapel Hill: University of North Carolina Press, 2009); Gary Bunt, *Islam in the Digital Age: E-jihad, Online Fatwas and Cyber Islamic Environments* (London: Pluto Press, 2003); Eugenia Siapera, "Theorizing the Muslim Blogosphere: Blogs, Rationality, Publicness, and Individuality," in *International Blogging: Identity, Politics, and Networked Publics*, eds. Adrienne Russell and Nabil Echchaibi (New York: Peter Lang, 2009) 29-46; and Jon Anderson, "The Internet and Islam's New Interpreters," in *New Media in the Muslim World*, eds. Dale Eickelman and Jon Anderson (Bloomington: Indiana University Press, 2003) 45-60.

24.1%). This is a transnational group with bloggers from Egypt, Saudi Arabia, North African, and Gulf countries, though Egyptians are the biggest group. It is also predominately male; approximately two-thirds of bloggers identifiable by gender are men. This group is much more focused on discussion of Islam than on politics, with much less advocacy of political reform or discussion of political leaders than most other clusters. This cluster's interpretation of Islam also appears to be more traditional or conservative, and criticism of other faiths is very high compared with other clusters (27.3% vs. 3% average for the network overall). Terms that this cluster prefers are overwhelming related to Islam, Islamic figures and thinkers, and other religions.

Researcher comments:

- *Personal Egyptian (Islamic) blog. The title or premise of the blog is 'Have you forgotten Heaven?' with a picture of a female Hamas supporter holding up a Qur'an. It is a very Islamic blog with a newsreel at the top with news on Islamic 'resistance' (Lebanon, Sudan, Somalia.) Posts could be split into three categories. First, posts that hint towards the creation of an Islamic state/caliphate with many of them being historical, about the downfall of the Caliphate and other Islamic nations, or about Islamic movements around the world. Secondly, a lot about the "other's" (I can only guess she means non-Muslims) and treatment of Muslims in the West and other places, including being jailed and tortured. Thirdly, posts about how to be a good Muslim. Many posts are also about "Muslim" Palestine. The blogger is Sunni and seems to be Salafist/Wahabbist, though she protests these labels in one of her posts.*

- *This is an Egyptian blog devoted to spreading Islam. The blogger praises the virtue of the religion, and links to several sites with information and videos. The blogger also descends into sectarian territory, blasting Christianity and Judaism and singling out Egypt's Coptic Christians for criticism.*

- *The blogger has an attraction to the televangelist Amr Khaled and is devoted to this new type of preacher who makes Islam more user friendly to those who have not yet reached a high level of faith or Iman. The blogger recognizes the importance of using media, including blogs, to spread faith amongst the young and seems to have a somewhat paranoid vision of how foreigners (Israelis and Americans) are fighting Islam. On the other hand, she cites a story about an American woman who started out with the intention of subverting Islam only to convert.*

- *This blogger is vehemently against secularism, viewing the separation of church and state as incompatible with Islam. It is this very incompatibility that distinguishes Islam from Christianity. Blogger seems closed to other cultural influences.*

- *The blogger is very hostile towards the Coptic minority in Egypt, citing their monopoly over the economy. He also seems to have entries that have to do with Muslims (which are termed dogs) who have become apostates.*

- *This is a religious blog with theological information about Islam, and various fatwas on different occasions and issues, such as Valentine's Day.*

Arabic Maghreb

These bloggers are mainly Magrebis who only use Arabic, and are in general more religious than their Francophone counterparts in the Magreb/French Bridge cluster. There are also some Muslim Brotherhood bloggers from Egypt who, because of similar linking preferences, are in this cluster as well. Some of these Muslim Brotherhood members appear to be young and particularly conservative (perhaps even militant), in opposition to the more numerous young, reform-minded brothers we see in the Muslim Brotherhood attentive cluster. The analysis of word and term frequencies shows this cluster to be particularly attuned to Gaza and Palestine, including Hamas leaders and militant organizations such as the Hamas' Izz ad-Din al-Qassam Brigades and the Popular Resistance Committees. They are less interested in theology, and more in politics, than the Islamic Discourse cluster.

Researcher comments:

- *There is an entry in which the blogger discusses the possibility of being an Islamist and of political dissent vis-a-vis the ruler, given the Qur'anic verse to obey the wali. What he states, quite clearly, is that this form of opposition can take on a military form (using weapons to be exact), so I am concluding that he implicitly agrees that violent means can be used to oppose a corrupt ruler. The blogger is very interested in how Islamist movements can spread culturally and resist Western missionary activity, which he sees as being inseparable from Western imperial ambitions. For him minorities are quite suspect. The Bahai's, for instance, are seen to thrive wherever Zionism flourishes. The Ahmadiyas are likewise seen to be puppets of British colonialists. In keeping with this logic, feminist thinking and so forth are viewed as Western ideologies intended to capture minds and destroy Islam from within.*

- *This is the blog of a Moroccan woman who writes about her life as a student, her opinion that Moroccans ought to always speak in Arabic instead of French, and has posts about her daily life, including one in which she became upset over misplacing a large sum of money.*

- *Blogger is critical of the domestic situation in Morocco and rampant corruption in the government. Blogger condemns the political situation, corruption, and false statements in government project implementation.*

- *The blogger is advocating 'Without French,' a campaign dedicated to promoting the use of Arabic in Morocco and protesting the widespread use of French as a main language. Most posts are about preserving Moroccan identity (both Arab and Amghazi/Berber) including news about the issue in the surrounding areas.*

- *This is a very conservative Muslim Brotherhood blogger. While some members of the group focus more on politics than religion and reach out to moderates, this blogger writes mostly about religious devotion and describes himself as "a soldier in the Muslim Brotherhood army."*

Baha'i

This small cluster is made up of Baha'i bloggers or bloggers that discuss Baha'i topics. Among religious topics, this group talks overwhelmingly about other religions, including criticism of other faiths, but also interfaith dialog. Since the Baha'i are persecuted is some countries, this may help explain why this group is more likely to blog anonymously (75%)

than any other cluster. This group of bloggers is also the most critical of political Islam of all clusters. They also seem to talk about family life more than other clusters.

Coder comments:

- *The blog exists to promote the Baha'i faith, encourage members of the Baha'i religious community, and to tackle spiritual questions such as why God allows there to be so much pain in the world.*

- *This blogger reveals nothing about his/herself, and simply reposts news articles and information about the status of Baha'is in Egypt, criticizing the treatment that the tiny religious minority group suffers.*

- *This is the blog of a grandfather and grandmother who are members of the Baha'i faith. They write about their kids and grandkids, and also about their religion. They focus especially on the troubles faced by their co-religionists in many nations in the Middle East.*

- *This is the blog of a young Baha'i man in Egypt, who promotes his faith and urges tolerance for his co-religionists. He focuses in particular on the recent identity card controversy in Egypt, complaining about the recent government ruling that disallows claiming Baha'i faith on one's national identity card, leaving Baha'is a choice of listing another religion or being unable to work legally in Egypt and receive social benefits.*

RESULTS: HUMAN CODING

To complement automated techniques, we also conducted exploratory human coding to understand what issues bloggers discuss, their opinions on different topics, and demographic data about the coders. A team of Arabic speakers coded 4,370 Arabic language blogs from April 2008 to March 2009. Two code sheets, or questionnaires, were used to determine demographic data about each blogger (age, location, gender, etc.), as well as topics that bloggers discuss. Coders were able to add topics not listed in the code sheet, and, finally, coders were required to write a short description of each blog or blogger and what was unique or stood out about them. These researchers coded blogs 'live,' meaning they read each blog online at the time the blog was coded. They were instructed to code based on the most recent five to seven recent posts, and did not read archived material. Thus, these results indicate a 'slice of time,' and so it is a guide to the relative salience of particular concerns, rather than a comprehensive assessment of what topics bloggers may have discussed over a long period.
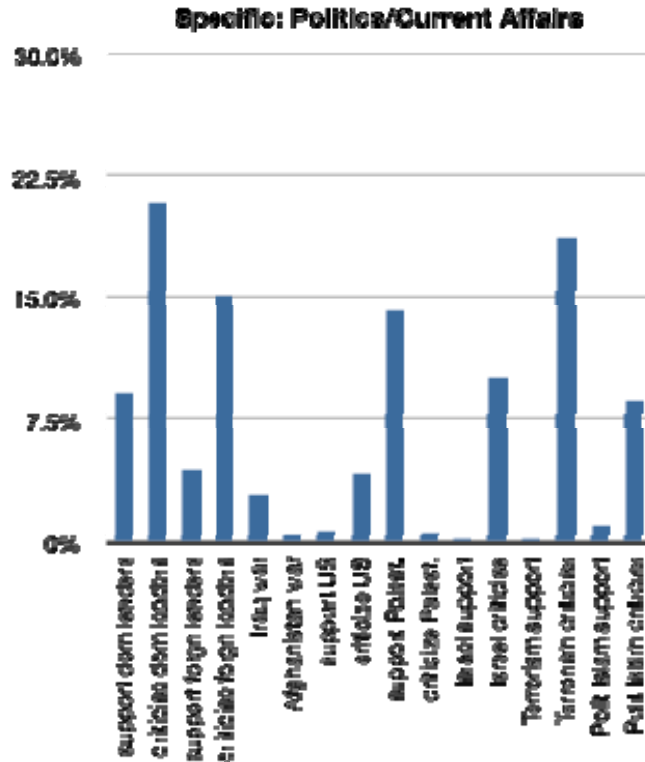
Topical and Issue-Based Coding Results

Figure 2: *Specific Political Topics*

We asked coders to indicate the specific political issues that bloggers discussed. This included whether bloggers showed support or criticism for foreign and domestic leaders, the United States, the wars in Iraq and Afghanistan, Israel, Palestine, terrorism, and political Islam.

Out of the over 4,000 blogs that we coded, less than 1% express explicit support for terrorism. Further, 19% of bloggers are explicitly critical of terrorism, which makes it the second most popular specific topic we asked about. Also, only 1% show support for political Islam while 9% criticize it. These results, combined with other findings throughout the study, seem to indicate that concerns of policy makers in the United States regarding the use of the Internet for spreading hate and support of terrorism may be overblown.[27] A number of recent polls of public opinion in the Arab world support the finding of low, and decreasing, support for violent extremism. According to the Pew Global Attitudes Project's report 'Global Public Opinion in the Bush Years (2001-2008),' although mistrust among Muslims and the West remains, there was a notable decline in support for suicide bombings in Muslim public opinion from 2002 to 2008. In Lebanon, support for suicide bombings dropped from 74% in 2002 to 32% in 2008 and in Pakistan from 33% to just 5%. Further,

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[27] However, as we note in the discussion section of this paper, terrorism means different things to different people, needs to be put in context, and additional research is needed in this area. Here we are referring to anti-Western extremist groups such as Al-Qaeda who carry out attacks on civilians for political ends.

Pew found that support for Osama bin Laden has plummeted in recent years in Muslim countries, dropping from 56% in 2003 to 19% in 2008 among Jordanian Muslims, while just 2% of Muslims in Lebanon and 3% in Turkey were confident that Osama bin Laden would do the right thing in world affairs.[28]

At least in the kind of online 'public publics' represented by Arabic blogs, discourse appears varied, thoughtful, and for the most part moderate. This is not to say that anti-Western ideas are absent, or that groups like Hamas and Hezbollah do not have significant support, but that these ideas are countered by others, and support of Al Qaeda and civilian attacks is very rare when measured against the number of voices concerned with more constructive ideas and compassionate attitudes. To the extent that pro-terror messages thrive online, they do so in the more shadowy 'private publics' constituted within ephemeral chat groups, bulletin boards, and closed social networks.

Additionally, bloggers are far more concerned with domestic political issues than with the United States or its wars in the region. Criticism of domestic political leaders is the most frequent political topic of those we coded, followed by criticism of terrorism. Criticism of foreign leaders is also significant, as is support for Palestine and criticism of Israel. Regarding concerns in American public diplomacy circles that the Arabic blogosphere and media are tilting Middle East audiences against the United States and its policies, the United States and the wars in Iraq and Afghanistan are discussed far less than other topics. Interestingly, most discussion of the United States is found in the Levantine/English Bridge, the part of the network which connects with a wider international, including American, audience. In the English Bridge cluster, 18% are critical of the United States, while 7.1% express support. Overall across the network, 4% are critical of the United States and 1% expresses support. Only 3% discussed the war in Iraq, and only 6 blogs (less than 1%) discussed the war in Afghanistan. These results seem to indicate that Arabic bloggers, as we found with Iranian bloggers previously, are far more concerned with issues at home and with their own political leaders than they are with the United States.

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[28] Andrew Kohut, Richard Wilke, Erin Carriere-Kretschmer and Kathleen Holwart, "Global Public Opinion in the Bush Years (2001-2008)," Pew Global Attitudes Project, December 18, 2008, available at http://pewglobal.org/reports/display.php?ReportID=263 (accessed May 27, 2009). See also Steven Kull, et al, "Public Opinion in the Islamic World on Terrorism, al Qaeda, and US Policies," WorldPublicOpinion.org, Program on International Policy Attitudes, U. of Maryland, February 25, 2009, available at http://www.worldpublicopinion.org/pipa/pdf/feb09/STARTII_Feb09_rpt.pdf (accessed May 28, 2009), which found large majorities denounced attacks on American civilians and that views of Al Qaeda were mixed, with majorities supporting their 'Islamist goals' but disagreeing with their tactics of attacks on civilians; Shibley Telhani, "2009 Annual Arab Public Opinion Survey," University of Maryland/Zogby International, available at http://www.brookings.edu/events/2009/~/media/Files/events/2009/0519_arab_opinion/2009_arab_public_opinion_poll.pdf (accessed May 27, 2009), which found that 32% did not empathize at all with Al Qaeda, up from 21% in 2008, and that only 7% supported their methods of operation. The Human Security Project's "Human Security Brief 2007," available at http://www.humansecuritybrief.info/access.html (accessed May 28, 2009) review of public opinion polls also found a trend of decreasing support for terrorism and al-Qaeda in the Muslim world. For a criticism of extrapolating Arab public opinion from surveys in the region and the overemphasis on questions about perceptions of the United States see Kenneth Pollack, "Slippery Polls: Uses And Abuses of Opinion Surveys from Arab States," Washington Institute for Near East Policy, April 2008, available at http://www.washingtoninstitute.org/templateC04.php?CID=290 (accessed May 28, 2009); Pollack also notes the underreported but dramatic rise in opposition to anti-American terrorism in the polls.

Coders were also asked to identify general topics discussed by bloggers. Coders could chose as many topics as applied from an initial list, and could add additional topics. Topics were broken out across three broad categories: 1) politics and public life, 2) culture, and 3) personal life. Among general politics and public life topics (Figure 3), it is clear that domestic news (64%) and international news (46%) are the most popular, which seems to support the theory that news is an important driver of content in blogs. Also popular with bloggers, but at lower levels, are ethnic minority issues (25%) and economic issues (21%). Even fewer, 19%, discussed either domestic political reform (advocating change within the current regime or systsem) or women's issues (rights, status, hijab, feminism, etc.).
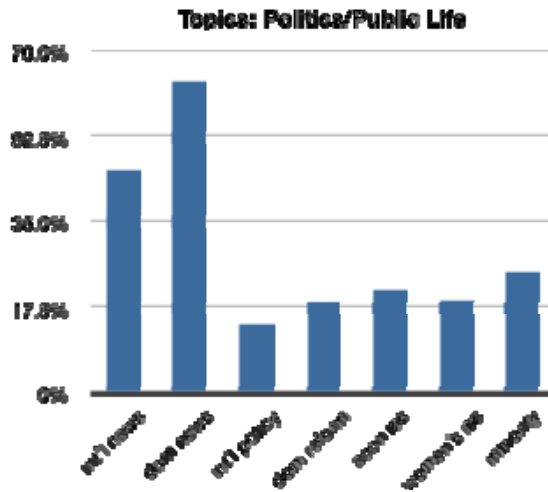

Figure 3: Politics and Public Life

Religion is also a popular topic in the Arabic blogosphere. Religions other than Islam are rarely discussed (4%), and there is very little criticism of other faiths (3%). Instead, Arabic bloggers mainly write about their own personal religious thoughts and experiences (35%). Fewer, though still a substantial number (12%) write about Islam generally, including the Qur'an, theology, Islamic interpretation, and history. Discussion of Sunni and Shi'a doctrine and thought in particular amounted to just 5% combined, and less than 1% discussed Sufism. In one cluster however, Islamic Discourse, theological discussions are prevalent (68.2%), and criticism of other faiths is significant (27.3%).
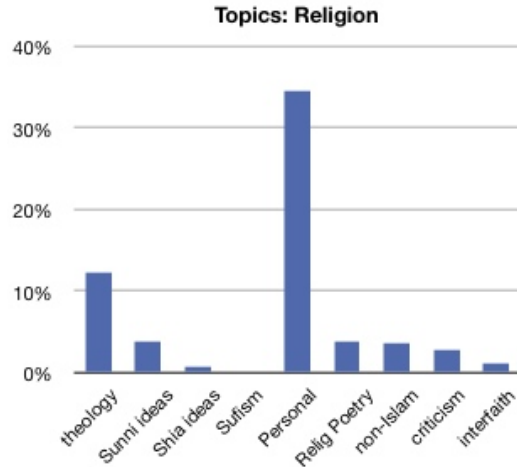
Figure 4: Religion

The majority of Arabic bloggers (73%) use blogs in a personal diary format (activities, private thoughts and reflections, etc), which is not surprising given the infrastructure of blogs. However, it is quite rare for them to discuss their personal single life (14%), which included love, relationships, dating, etc., or even family life (love, marriage, children, etc.) at just (15%).
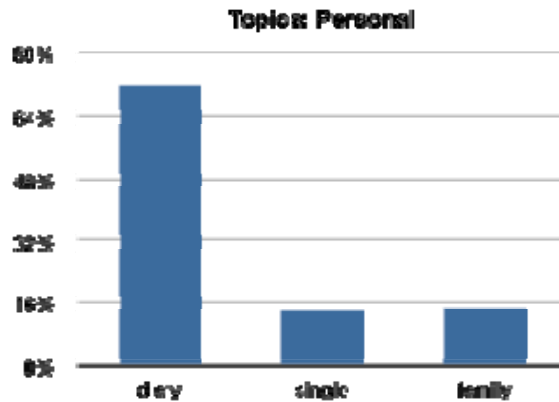

Figure 5: Personal Life

Among cultural topics, 'high culture topics' (51%), including poetry, literature, and art, handily beat out pop culture topics, including movies and television (12%) and music (7%). Human rights (civil and political rights)[29] is a fairly popular topic, discussed among 43% of bloggers. Criticism of Western culture and values was fairly rare, discussed just 9% of the time, although support was equally limited (10%).

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[29] By human rights we mean civil and political rights (freedom of speech, assembly, etc.). We did not indicate this on the code sheet, however, so it is possible coders could have interpreted the term more broadly.
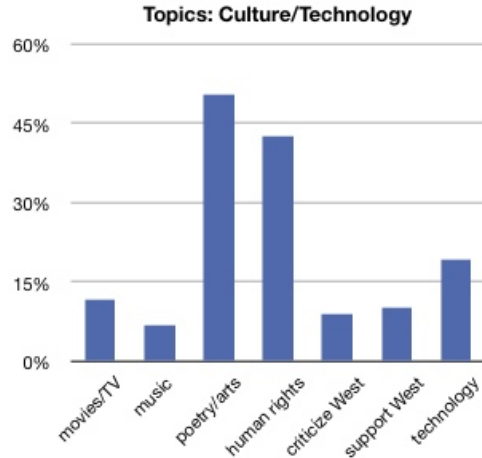
Figure 6: Culture and Technology

Demographic Results

A clear majority of bloggers (83%) are located primarily in their own country. Of the expatriates (5% total), just 3% are located outside of the Arabic speaking world. Coders could not tell where bloggers were located 13% of the time, which is not insignificant, but still much lower than in our Iran study. Specific country locations and concentrations of expatriates are discussed in the cluster descriptions, but we note here that Egypt has the largest number of bloggers on our map.

Since the Arab speaking world encompasses such a large, varied group of countries it is dangerous to generalize about freedom of speech in the Arab world, but we note that, as a region, the Middle East is one of the least free in the world according to global democracy and governance indices such as those from the World Bank, UN Arab Development Report, Freedom House, and the Economist Intelligence Unit. However, despite the low levels of freedom of speech in the region, 64% of bloggers use their name when writing, while only 37% blog anonymously, or use an obvious pseudonym.[30]

In terms of age and gender, bloggers are overwhelmingly young and male. About three-quarters of bloggers (Figure 7) are under the age of 35, with the majority of those (45%) in the 25 to 35 year-old age range, while just 9% are over 35, and almost none are over 60 years of age, indicating that a significant gap between younger and older bloggers. Thirteen percent of the time coders could not assess a blogger's age range. Sixty percent of bloggers are male and just 34% female, indicating a significant gender divide, although this is still a higher proportion of female bloggers than we found in our Iran study.

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[30] According to Marc Lynch anonymity has been a divisive issue in the Arabic blogosphere even though it can be risky for political bloggers to write with their names. "Many of the more politically engaged bloggers have chosen not to use pseudonyms, on the assumption that they would be unlikely to remain unknown to state security services anyway." Marc Lynch, "Blogging the New Arab Public."
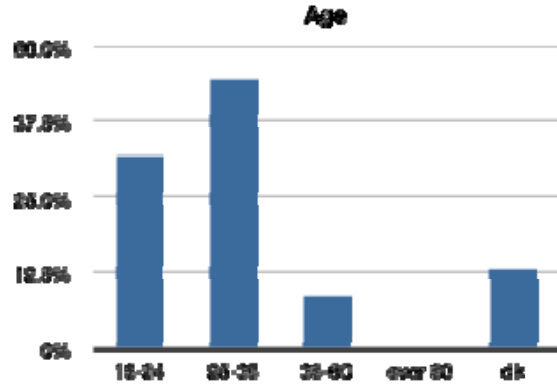
Figure 7: Age

Gender and Blogs

We broke out differences between known male and female bloggers to see if there were significant differences among blogger demographics or topical preferences. One of the most striking differences is found in anonymity results. Coding data reveals that while both groups were more likely than not to attach their name to their writing, female bloggers are much more likely to blog anonymously than their male counterparts. Forty-two percent of female bloggers wrote anonymously or with an obvious pseudonym, compared to just 29% of males.

While both male and female bloggers are young (under 35), female bloggers made up a much larger proportion of 18-24 year olds. The plurality of female bloggers (47%), were in the 18-24 year old category, compared to just 24% of male bloggers. There were also far fewer female bloggers over 35 (only 3%), compared to 14% of male bloggers. The majority of male bloggers were in the 25-35 year old category.

Among politics and public life issues, both men and women preferred to talk about domestic and international news more than anything else, in almost equal number. However, women's issues (rights, status, hijab, etc.) were talked about more often among female bloggers (16%), compared to males (6%).

Among personal life topics, females were more likely than males to discuss single life (19%) and family life (15%), but not by much; just 5% more than men for single life and 3% more than men for family life.

When talking about religion, female bloggers were more likely to discuss personal religious thoughts and experiences than males (61% vs. 53%), while men discussed the Qur'an, theology, and the interpretation of Islam slightly more often than women (21% vs. 18%).

Among all bloggers, a) poetry, literature, art, and b) human rights are the most popular topics in the culture and values category. However, female bloggers were much more likely to discuss poetry, literature, and art than men (47% vs. 30%), making it the most popular topic among women, while the second most popular for men. The most popular topic for men was human rights (31%), which was discussed less by female bloggers (23%). Male bloggers were also more likely to discuss technology (14%) than women (8%). Men were

also slightly less likely to be critical of western culture and values (7% compared to 4%), but not by much, and this was not an especially popular topic overall for either gender group.

Female and male bloggers did not differ much in their preference for discussion of specific political topics. Male bloggers were slightly more likely to be critical of domestic political leaders than female bloggers (19% vs. 15%), and women were slightly more likely to voice support for Palestine than men (14% vs. 11%). Overall, however, their preferences among specific political topics were quite similar.

Gender differences are also discussed in the detailed cluster descriptions, but we note here that the Egyptian Youth sub-cluster (47% F) and Saudi Arabia (46% F) had the most female bloggers, while the Maghreb French (89% M) and Syrian (87% M) clusters have the largest proportion of male bloggers in the Arabic blogosphere.

THE ARABIC LANGUAGE MEDIA ECOSYSTEM

Like blog networks around the world, the Arabic blogosphere directs a lot of attention (via links) to traditional (mainstream print and broadcast) media sources.[31] The patterns of these links reflect the divisions and clusters we see in the network, and also reveal a small set of sites that have broad reach across the Arab world. Many bloggers in the large Arabic language national clusters link to their own national media entities. For instance, mainly Egyptian bloggers link to www.ahram.org.eg, akhbarelyom.org.eg, and alwafd.org. Mainly Kuwaiti bloggers link to alwatan.com.kw, alqabas.com.kw, and alraialaam.com. And mainly Saudi bloggers link to alriyadh.com and alwatan.com.sa (Figure 8). These national media entities do receive some links from outside their co-national blogger cohort, but far fewer than from within. There is a very different story among the Levant/English Bridge bloggers, who overwhelmingly link to international English language media sources such as news.bbc.co.uk, guardian.co.uk, cnn.com, english.Al Jazeera.net, and nytimes.com (Figure 8). Some national, mainly Lebanese, media sites receive links from a significant number of bloggers as well, including the English language dailystar.com.lb, and Arabic language al-akhbar.com. The English language Israeli news site haaretz.com also receives links from a significant number of bloggers.

Looking at the sites that have broad reach across the Arabic blogosphere, the importance of 'Web 2.0' sites is striking. Of the ten sites with the most links from bloggers in our map (Figure 8), half are the same Web 2.0, user generated content sites popular in the United States and globally. YouTube (#1) is linked to by more than twice as many bloggers as the second most popular site, English language Wikipedia. English Wikipedia (#2) and Arabic Wikipedia (#6) each receive links from bloggers across the map (Figure 10). After Web 2.0, the second most important category of Web site is broadcast media. Al Jazeera (#3), BBC (#4), and Al Arabiya (#7) all reach broadly across the entire Arabic blogosphere, though

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[31] For an overview of traditional and new media in the Arab world and political impacts see Marc Lynch, *Voices of the New Arab Public: Iraq, Al-Jazeera, and Middle East Politics Today* (New York: Columbia University Press, 2006); William Rugh, *Arab Mass Media: Newspapers, Radio, and Television in Arab Politics* (Westport: Praeger, 2004); and Jon Alterman, "New Media, New Politics? From Satellite Television to the Internet in the Arab World," The Washington Institute for Near East Policy, Policy Paper #48, 1998.

BBC's links are slightly weighted to the Levant/English Bridge cluster, Al Jazeera to Egypt, and Al Arabiya to Saudi Arabia. Perhaps it is worth noting that the US-sponsored Arabic media outlets are far less successful among Arabic bloggers than regional efforts and the BBC, with Radio Sawa ranked at #507 and Al Hurra at #2,871. Two 'Web native' sites round out the top 10: Islamonline.net is a bi-lingual (English and Arabic) site featuring Islam-related international news and information, including applying Sharia in contemporary life, relations with other non-Muslim faiths, etc. Manalaa.net (#10) is a first-generation Egyptian blog with posts in English and Arabic, which by virtue of early-mover advantage is a staple of blog rolls across the Egyptian clusters, and among some outside as well. Of the top ten sites, it is the only one with links heavily skewed from a particular part of the map, in this case Egypt. Some additional sites are pan-Arabic in their reach, such as the news sites news.google.com (#21) and arabic.cnn.com (#23) and the Islam-oriented site Islamway.org (#15). Outside of the top ten, national or cluster-specific outlinks are the most common.

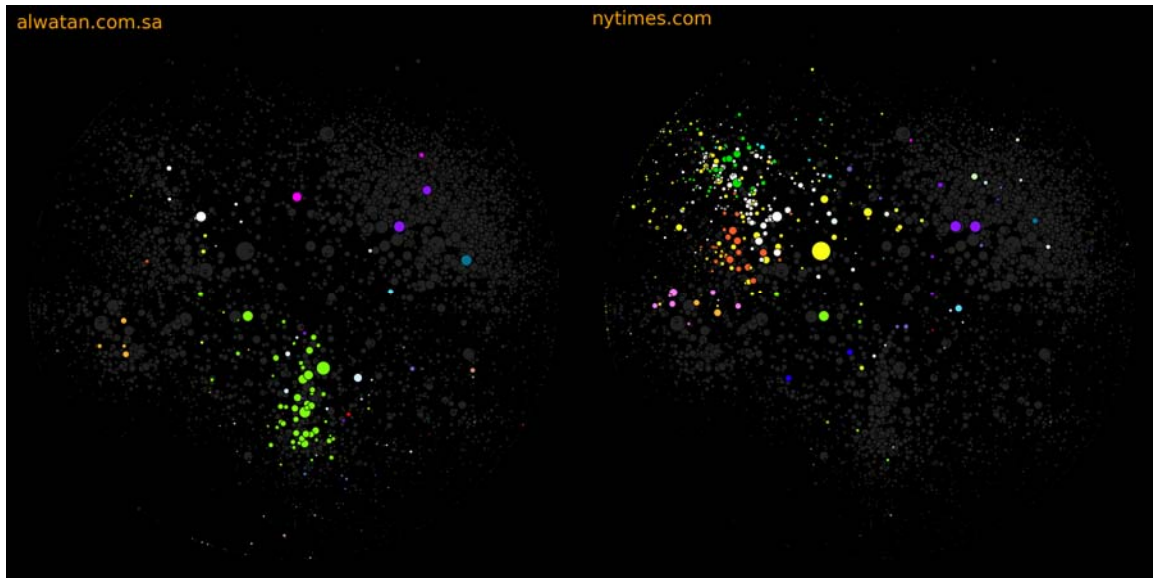| rank	#blogs	url	type
1	2070	youtube.com	Web 2.0
2	932	en.wikipedia.org	Web 2.0
3	817	Al Jazeera.net	broadcast
4	816	news.bbc.co.uk	broadcast
5	795	flickr.com	Web 2.0
6	667	ar.wikipedia.org	Web 2.0
7	566	alarabiya.net	broadcast
8	500	islamonline.net	webnative
9	483	digg.com	Web 2.0
10	456	manalaa.net	blog

Figure 8: Top 10 Widely Linked Sites

Figure 9: Links to Al Watan (Saudi) and New York Times

Figure 10: Links to Arabic and English Wikipedia

Figure 11: Links to Al Jazeera and BBC

A CLOSER LOOK AT YOUTUBE

As noted above, YouTube is linked to by more Arabic bloggers than any other site, by a factor of more than two. However, there is a critical difference between YouTube and a news site like Al Jazeera that affects how it may or may not act as a central hearth for the Arabic networked public sphere. YouTube functions more as a media platform than as a publisher with editorial control, and so while Arabic bloggers link to YouTube videos in droves, they are not often linking to the same videos, and usually not in pan-Arab patterns. Instead, the distribution of links to particular videos mirrors in microcosm the distribution of links to Web sites. Very few videos are linked to by bloggers spread across the map, while

more are linked to by bloggers from particular clusters. We looked at 30 of the most highly cited recent videos and found that the content tends to be politically oriented. And there is one topic in particular that is the focus of pan-Arabic blogosphere interest: the Palestinian-Israeli conflict, particularly the conflict in Gaza. The most highly cited video, posted on January 07, 2009, features a song (in English, by an American) against the Israeli actions in Gaza, including video clips of bombings. Among the top 30, eight are about the Israel/Palestine conflict, and six are about Gaza in particular (however, one of these is a separate upload of the song that is #1.). The second most popular video, for which there are also two versions in the top 30, is the one in which a shoe is thrown at George W. Bush in Baghdad.

Aside from Palestine/Gaza and the projectile shoe incident, the remainder of the top 30 are mainly videos with cluster-specific political or social significance. These include clips recorded from television, produced videos, and amateur video shot on the street of unfolding events.

One shaky amateur video shows Saudi Shi'a minority women attempting to perform a ceremony in Medina, while groups of youth allegedly desecrate ('steal soil') from the graves of revered Islamic figures buried there. Dr. Aseel Al-Awadi, a professor at Kuwait University, announces her candidacy for the Kuwaiti parliament. There are a number of videos about Egyptian Baha'i, including incidents of discrimination and events affecting their rights. These are mainly linked to by the small cluster of Baha'i' bloggers on the map, which demonstrates the ability of small focused groups to drive link counts, though not always view counts. These videos and others show people and events with mainly local or national implications, although they feature common themes such as the abuse of power, interpretation of Islam, and religious tolerance.

num	count	YT video ID		title
1	50	dlfhoU66s4Y	pan	We will not go down (Song for Gaza) -by Michael Heart
2	29	OM3Z_Kskl_U	pan	Raw Video: Iraqi Journalist Throws Shoe at Bush
3	20	3usdvcu1fVQ	eg	TV clip about controversial Baha'i new year celebration
4	19	4EWPZ5sm4t4	kw	I swear…! Kuwaiti Celebrity PSA campaign
5	17	ewXkEHNYyB8	pan	a trailer for a documentary about occupation of Gaza
6	12	h-E4-E63ok0	egy	'The Pasha's Daughter is Terrifying People on the Street'
7	12	d8NZTogDosc	kw	female Kuwaiti professor announces candidacy for Parliament
8	11	Vn-iT70e8bU	bah	Baha'i homes burning, incident from April 2009
9	11	o5UAkDjqev8	kw	'In Kuwait, Singing Is Still Possible' separation of sexes protest
10	11	Hzqw7oBZT8k	pan	Animation about restrictions of Palestinians' movement
11	11	VVZtcW6HOco	sa	Saudi Prince calls into sports TV show, harsh words for host
12	10	1LjgfUwilp4	eg	Egyptian TV report of Baha'i house burning incident
13	10	iszbLbUf-OA	pan	Young girl recites poem about Palestinian suffering
14	9	H39i5tYTxaI	pan	Al Jazeera clip of Palestinian child describing Gaza attack
15	9	zGp2we8bVac	kw	Kuwait Parliament member at Hamas celebration, criticized
16	8	jAz6jpg9LiM	sa	Al Jazeera discussion of Internet use for 'resistance' in Gaza
17	8	rpiccERJaFk	sa	Video reply to Geert Wilder's anti-Islamic film, 'Fitna'
18	8	DeaZuj7ruwM	pan	Fox News interview with Rabbi from Jews Against Zionism
19	8	BmgFQiaYEdk	pan	Saudi Cleric denounces mice
20	8	M8GOrc0-Ygg	pan	another video of Bush shoe incident

21	8	IHS0P7aZZ4o		video removed for copyright infringement
22	8	Jbr8LBR5k-8	egy	repeat of video #1, 'We Will Not Go Down'
23	8	AIzbwV7on6Q		Trailer for Slumdog Millionaire
24	8	0xOLy9k_6VA		Al Jazeera program on Arabic (mainly Levantine) blogosphere
25	8	JXhpFSb8mQ0	egy	Mostly silent clip of footage inside of Egyptian prison
26	8	TCj7sY9Tn9A		Al Jazeera clip on Turkish President's frustration at Davos
27	8	AnwQ_PhDr9c	lb	Lebanese TV presenter screams at Hezbollah and Leb. Army
28	7	ObctpzziUGo	eg	Egyptian TV announcing Court decision on Baha'i rights
29	7	39gAH4pYOSI		'Island Talk' Former prisoner questions Guantanamo
30	7	S_BY39tnOkw	eg	Saudi Shi'a in Medina, incident captured on phone cam

Figure 12: Top 30 Most Cited YouTube Videos

Examples of Videos linked from across the Arabic blogosphere

1. http://www.youtube.com/watch?v=dlfhoU66s4Y
   Title: We will not go down (Song for Gaza) - by Michael Heart
   Summary: This video clip is of a song (in English) against the Israeli actions in Gaza, including video of bombings. Some of the lyrics are as follows:

   > *A blinding flash of white light*
   > *Lit up the sky over Gaza tonight*
   > *People running for cover*
   > *Not knowing whether they're dead or alive*
   >
   > *They came with their tanks and their planes*
   > *With ravaging fiery flames*
   > *And nothing remains*
   > *Just a voice rising up in the smoky haze*
   >
   > *We will not go down*
   > *In the night, without a fight*
   > *You can burn up our mosques and our homes and our schools*
   > *But our spirit will never die*
   > *We will not go down*
   > *In Gaza tonight*

2. http://www.youtube.com/watch?v=OM3Z_Kskl_U
   Title: Raw Video: Iraqi Journalist Throws Shoe at Bush
   Summary: The second most popular clip in the Arabic blogosphere is Associated Press coverage of Iraqi journalist Muntadhar al-Zeidi famously throwing both his shoes at then U.S. President George Bush at a press conference in Baghdad.

5. http://www.youtube.com/watch?v=ewXkEHNYyB8
   Title: Why the Children of Gaza Do Not Deserve to be Killed?
   Summary: This is a trailer for a documentary called 'Occupation 101' about Israel's occupation of Gaza, as told through the eyes of Palestinian children.

10. http://www.youtube.com/watch?v=Hzqw7oBZT8k:

Title: Closed Zone.
Summary: This animated clip was created by Gisha (The Legal Center for Freedom of Movement), an Israeli organization. It shows the limitation on the movement of Gazans due to Israeli security restrictions. According to the clip's description on YouTube, "Gisha - Legal Center for Freedom of Movement calls on the State of Israel to fully open Gaza's crossings and to allow the real victims of the closure - 1.5 million human beings - the freedom of movement necessary to realize their dreams and aspirations."

14. http://www.youtube.com/watch?v=H39i5tYTxaI
Title: A Palestinian child describes the children's suffering during the war on Gaza. (From Al-Jazeera Arabic TV).
Summary: The child in this clip describes how the children of Gaza have suffered from the attack on Gaza. According to experts in the region, this clip was very popular because the child was very articulate. He talked about how the children have no water and food, and that they watch bloody conflicts on TV instead of cartoons and children's programs. Al-Jazeera TV used part of the clip as a promo during the war on Gaza.

18. http://www.youtube.com/watch?v=DeaZuj7ruwM (In English)
Title: Interview with Rabbi Yisroel Weiss
Summary: This is a clip of Fox News commentator Neil Cavuto interviewing Rabbi Yisroel Weiss from Jews United Against Zionism about whether it is proper for Jews to have their own political state.

Examples of Videos linked by particular clusters:

Kuwait

4. http://www.youtube.com/watch?v=4EWPZ5sm4t4
Title: I swear…!
Summary: This clip comes in the context of a campaign called 'I swear', launched by a Kuwaiti media production company called *Zawaya*. 'I swear' was launched this year (2009) on February 25, which marks national Kuwaiti day. The clip consists of Kuwaiti celebrities pledging to do good things for the sake of their country. According to experts in the region, this video was initially welcomed due to its patriotic nature, and it was also found to be very similar to a one produced by Barack Obama during the US presidential campaign (http://www.youtube.com/watch?v=4EWPZ5sm4t4)

7. http://www.youtube.com/watch?v=d8NZTogDosc
Title: Dr. Aseel Al-Awadi Announcing Her Candidacy for the Kuwaiti Parliamentary Elections
Summary: This is a video of Aseel Al-Awadi, a professor at Kuwait University, announcing her candidacy in the May 2009 Kuwaiti parliamentary elections. In the video she argues for better health care for Kuwaitis while also criticizing the parliament for focusing on 'less important' political issues, while neglecting critical causes.

9. http://www.youtube.com/watch?v=o5UAkDjqev8

Title: In Kuwait… Singing Is Still Possible
Summary: The video is against legislation passed in 1996 that banned the mixing of sexes in classes, libraries, cafeterias and other public places. It includes a popular song, 'Singing Is Still Possible,' which was performed in the movie *The Destiny*. It includes press headlines such as 'YouTube is Banned in Kuwait' and 'Minister Calls for Censoring of the Internet' as well as clips of women using computers, sitting shoulder to shoulder next to men during a seminar, and a march by women in protest against the law while holding banners which announce "we will not allow fanatics to control us" and "Islam is clear…Sharia preserves our freedoms." The clip also shows news headlines on the broad censorship of books in Kuwait, including one that wonders, "Are books considered weapons of mass destruction?"

15. http://www.youtube.com/watch?v=zGp2we8bVac
This clip has been removed by the user. Here it is in an alternative location:
http://www.youtube.com/watch?v=VqaZmL1jIxY
Title: Hamas celebration in Kuwait
Summary: This video shows a victory celebration organized by Hamas supporters in Kuwait. A Kuwait Islamist Parliament Member, Naser al-Sanee, was allegedly among the attendees. According to experts from the region, this upset many Kuwaitis, some of who expressed anger in their blogs, because the bloggers said Hamas supported Saddam Hussein's invasion of Kuwait.

Egypt

6. http://www.youtube.com/watch?v=h-E4-E63ok0
Title: The Pasha's Daughter is Terrifying People on the Street
Summary: The video shows a woman fighting with a man, in a street at Giza neighborhood in Egypt. She explains to the people who were watching the fight that she offered compensation to the man, that she hit his car by mistake, but that he started to insult her.

     The woman is seen calling someone, who, according to her, is her father who is a the one high rank officer in a Giza security body. She is heard asking him to send her one of his police officers. Also, she is holding a stick on her hand, and someone in the clip says, "She told me that this is an electrical stick, and a beat with this stick would paralyze me!"

     The video is titled 'The Pasha's Daughter…' because in the Egyptian dialect 'Pasha' refers to a police officer.

     According to experts from the region, this video was first published in last August (2009) by the prominent blogger Wael Abbas after it had been filmed by someone on the street with his video camera. The blogger was able to obtain the license plate number of her car from the video and called for investigation into the woman. An independent newspaper (Al-Masry Al-Youm), managed to find the man who appears in the clip, whose car was struck, and who said that he followed her followed her car to report the accident to the police, and her mother eventually apologized on the woman's behalf and he accepted her apology. Many in Egypt were upset that the women was abusing her father's position in power, as well as the language she used against the person she had hit with her car.

25. http://www.youtube.com/watch?v=JXhpFSb8mQ0
Title: Prisons in Egypt
Summary: Mostly silent clip of inside of Egyptian prison; the speaking is very difficult to understand, partly due to dialect and partly due to sound quality.

Saudi Arabia

11. http://www.youtube.com/watch?v=VVZtcW6HOco
Title: Prince Sultan Bin Fahd … important words
Summary: This video is a clip from the Saudi Sports channel show dedicated to analysis of the defeat of the Saudi national football (soccer) team's loss to Oman during the Gulf championship. After discussing the loss, Prince Sultan Bin Fahd, the head of Saudi league for football joins the conversation by phone and quickly upbraids the panel one by one for their criticism of the team, including, "You! All what you said is wrong", "Don't speak about something you don't know... you're ignorant!", "If you give valuable advice, we will listen." The Prince then singles out the most critical panelist saying "Behave yourself!...Talk about something you understand, or keep silent', "We let you evaluate and analyze, that does not mean you go on criticizing out national team", "We lost the score but won good players!", and "behave like Saudis."
        The silenced panel meekly replied with comments like "God bless your lifetime!" and only one dared to comment on the prince's verbal assault by saying, "I am criticizing technical points about the team," which lead to another outburst by the Prince. "Behave yourself! If you were ill bred I would teach you what good manners are," but the man replied again "I am well bred, and not criticizing the kingdom, but a national sport team, which you are responsible for." The Prince got angry again, says unclear words before hanging up, the host thanks the Prince, and the clip ends.

30. http://www.youtube.com/watch?v=S_BY39tnOkw
Title: Untitled
Summary: This clip shows a group of women from the Saudi Shi'a minority group performing some rituals at a cemetery in the city of Medina, the second holiest Muslim city, where revered Muslim religious figures are buried. According to the Saudi authorities, the Shi'a women were performing rituals offensive to Muslims and tried to prevent them from doing so. Clashes between Shi'a groups and Saudi religious police erupted because of this incident. Shi'as claimed that the riot police were heavy-handed in dealing with the women and the other Shi'a protesters. In the foreground, youth allegedly 'stealing soil' from graves.

Baha'i

8. http://www.youtube.com/watch?v=Vn-iT70e8bU
Title: Baha'is (Baha'is Houses Burning)

Summary: This short video shows five Baha'i houses that were set on fire in April 2009, in a small island called Shuraneyah in Sohag governate in Upper Egypt. In this video, nothing but the fires and some shadows of people surrounding the burning houses is shown. Muffled voices are heard saying, "There is no God but Allah" and in the end that the police are coming.

12: http://www.youtube.com/watch?v=1LjgfUwilp4
   Title: Burning the houses of the peaceful Baha'is. (A clip from Egypt's al-Mehwar TV.)
   Summary: This is a clip from Egypt's al-Mehwar TV about attacks on the Baha'is. The show discusses who is behind attacks and the burning of Baha'i houses just one day before a conference that was organized by the Baha'is.

DISCUSSION AND CONCLUSION: DIVERSITY AND DISCOURSE IN THE PUBLIC SPHERE

In a part of the world where print and broadcast media traditionally have been controlled by the government, digital networked spaces offer the possibility of a much richer public sphere than existed before, providing a venue for all manner of opinions and ideas, covering love, life, culture, economics, religion, and politics. The methodology and findings of this study are grounded in the quintessentially public nature of the blogosphere. Unlike many other sequestered neighborhoods of online and offline life, there are relatively few institutional obstacles to becoming part of the audience or joining the conversation. The blogosphere explicitly welcomes readers. Blogs neither charge for admission nor require readers to pass through a vetting process for admission to the club. Blogs tend to offer archived, permalinked units of content that are visible to anyone, designed to link and be linked to, and tagged with metadata for maximal visibility to search engines. This participation in the link economy makes blogs an important part of an ongoing public record, indexed by search engines, cited by other bloggers, and otherwise kept alive as engrams in the social mind. The arguments, opinions, and analyses that are found in the blogosphere have been intentionally offered up to the world, an open contribution to public dialogue.

There are many areas of the Internet that are less public. The more limited, ephemeral modes of communication found in forums, chat rooms, bulletin boards, and social network services do not offer the same searchable, more permanent public record but rather represent different varieties of private arenas, often in the shadows of the networked public sphere. In these we are more likely to find personal social conversations, as well as the subversive and the profane, not significantly linked to the larger public discourse, sometimes intentionally lurking on the fringes, and always less visible to the outside. The communication in these quasi-private realms is limited in audience and generally excluded from the 'link economy' that knits together much of the content on the Internet. Generally speaking, these enclaves are well suited for low-profile discussion among networks of friends and like-minded strangers, and are sometimes an organizing space for mobilization of these networks. The architecture and social norms of the blogosphere, on the other hand, are conducive to public expression, contestation, and synthesis of ideas. Blogging is not the main way that Internet users in the Arab world interact online; Arabic forums are extremely popular, as are Facebook and other 'hybrid' platforms, like Live Spaces, which combine online journals with platform-specific social networking functions and do not (in practice)

connect strongly to the wider online public. However, where it thrives, blogging creates open, society-wide networks that generate, filter, and circulate information, feeding back into the mainstream media and directly to political elites.

The topics and ideas that disseminate in the blogosphere are the result of choice and interest in a menu of issues that have been intentionally offered for public consumption. Seen through this lens, the clusters that emerge in the Arabic blogosphere and the issues that occupy this public space are indicative of large social processes and preferences, and are highly suggestive of the interests and mood of the public. Further research is required to determine how opinions in blogs correlate with offline public opinion, and the degree to which these online publics may represent 'counter-publics' speaking online because they have little outlet offline.

The formation of nation-based clusters, where networks of bloggers connect with fellow citizens, is a key finding of this research. The logic of this structure mirrors the reality of political and economic life, being rooted primarily in national and local affairs. The relative paucity of pan-Arab dialogue in the blogosphere, outside of where Arabic bloggers engage the West, is also notable. Our research shows that bloggers in the Arab world focus more attention on local political issues and leaders, and when discussing their leaders, devote more energy to criticism than support, a critical point of departure from the mainstream press. The conventional wisdom has been that Arab leaders have sought to deflect criticism of their own regimes toward international issues, including those promoted by extremist groups. The results of this study suggest that the opposite happens in the Arabic blogosphere, where more developed national networks focus more attention inward.

Those online structures that have not emerged are as telling as those that do. Although political ideologies play a substantial part in the formation of online communities, the clusters that we observe do not correspond to political parties. The emergence of online political clusters without clearly defined offline counterparts points to both the power of this new platform and its limits. As long as they are restricted to the online world, these emergent organizations will be constrained in the power and influence that they can exert.

The political movements of Egypt, such as Kefaya and the Muslim Brotherhood, are possible exceptions to this trend, as with them we see evidence of online groups coalescing around distinct political and religious ideas. This may be a sign of the Egyptian blogosphere's complexity, and we would expect to see this elsewhere as Arabic online publics grow. The case of the Muslim Brotherhood is especially interesting. While they are not permitted to openly organize offline, many in the Muslim Brotherhood have taken their ideas to the blogosphere. Opening up their thoughts to criticism within and outside their own community suggests a degree of confidence in the resilience of their ideas and amenability to debate. It is interesting to see these decidedly democratic practices taking root in civic organizations online.

Although not as important as domestic issues, international political topics are well covered in the Arabic blogosphere with very similar chords being struck across the region. Support for the Palestinian cause appears nearly universal, as is criticism for Israel. US involvement in the region is largely seen in negative terms. However, the relatively modest level of attention paid to the United States might come as a surprise to many Americans.

In press and policy circles alike, a lot of attention has been paid to the potential of the Internet for terrorist recruitment and propaganda, and a lot of this concern is focused on the Arab world. However, our study indicates that Arabic language blogs are not to any significant degree used to support extremism, preach hate, or organize terrorist activities.[32] In fact, support for terrorism or violent confrontation with the West appears to be rare. Out of the over 4,000 Arabic blogs that we coded, only a handful were judged to support violent extremism.[33] Furthermore, criticism of terrorism is common across the Arabic blogosphere. Some research has shown that even in Arabic language forums, which are less public than blogs in important ways and also provide more anonymity, terror discussions are a minority activity.[34] According to Islamic Internet scholar Gary Bunt, "Participation in militaristic jihad is a minority issue, on- and offline. Muslim individuals and organizations have expended considerable energies—on the Internet and elsewhere—distancing themselves from such acts."[35]

We do not argue that extremist Web sites and forums do not exist; certainly, they do, and our research does not address their impact. However, academic studies and media reports that focus exclusively on terrorist uses of the Web can leave the impression that this is a dominant form of discourse in the Arabic language Internet, and could lead to ill-informed policy responses, which could unintentionally limit the diverse, open, and often civically-minded political, cultural, and religious discussions that take place in blogs and other open Internet spaces.

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[32] For a discussion of how terrorists and Jihadists use the Internet see Bruce Hoffman, *Inside Terrorism* (New York: Columbia University Press, 2006) 197-228; Gary Bunt, *iMuslims: Rewiring the House of Islam* (Chapel Hill: University of North Carolina Press, 2009) 177-241; Yariv Tsfati and Gabriel Wiemann, "www.terrorism.com: Terror on the Internet," *Studies in Conflict & Terrorism*, 25 (2002); and Evan Kohlmann, "The Real Online Terrorist Threat," *Foreign Affairs,* Vol. 85, Issue 5, (September/October 2006) available at http://www.foreignaffairs.com/articles/61924/evan-f-kohlmann/the-real-online-terrorist-threat (accessed May 27, 2009).

[33] The definition of 'terrorism' is of course problematic, and beyond the scope of our research. Clearly, interpretations of what constitutes 'terrorism' vary across the Arab world, and the clash of interpretive regimes shows up in blogs, which can criticize terrorists in one post, and praise Hamas' 'resistance' in another. In this paper, we simply make a distinction between support for anti-Israeli political organizations like Hamas and Hezbollah that are considered terrorist organizations by many countries and international bodies, but are often seen differently in the Arab world, and support for organizations like Al Qaeda and violent extremist philosophies. The latter is what we refer to here as "terrorism," leaving the former as an issue for discussion by more knowledgeable specialists.

[34] Helmi Noman found that the majority of the forums he studied in 2005 were Islamic-themed. Regarding Jihadi forums, he writes, "These are few in numbers, but extremely active. They are believed to be run by Jihadi organizations and their supporters. Content in these forums is mostly claims of responsibilities and Fatwas on Jihad. Media organizations and several Western research sites actively monitor these sites and report their newsworthy materials. Authorities usually shut down these forums but they continue to pop up in new web servers." See Helmi Noman, "Content and Usage of Arabic Online Forums and Groups," available at:
http://www.helmionline.com/Internet/2005/10/web_content.html#more (accessed May 20, 2009).

[35] Gary Bunt, *iMuslims: Rewiring the House of Islam* (Chapel Hill: University of North Carolina Press, 2009) 183. See also Hsinchun Chen, Sven Thoms, T.J. Fu, "Cyber Etremism in Web 2.0: An Exploratory Study of International Jihadist Groups," IEEE International Conference On Intelligence and Security Informatics, 2008 (Forthcoming) available at http://ai.arizona.edu/research/terror/publications/ISI2008-Sven-WEB2.pdf (accessed May 27, 2009), who found only 28 Jihadist blogs in an exploratory study using automated techniques; most of those blogs were in Arabic and located in the Middle East.

When allowed to flourish, blogs can contribute to the formation of a networked public sphere with significant political, social, and economic value. As articulated by Yochai Benkler, the networked public sphere can support efficient interaction among important communities of interest, allowing them to negotiate agendas, process opinion, and broker knowledge. While these may sound like abstract values, blogging already shows signs of having an impact in the Arab world, such as facilitating cooperation between secular and Islamist reformers in Egypt, and promoting discussion and reform within the Muslim Brotherhood.

A popular meme is the notion that digital tools will play a key role in the reform of authoritarian political systems and will help to promote democratization. At the core of these hopes are several universally compelling ideas that are clearly at work in the Arabic blogosphere: opening up avenues for greater political participation, facilitating transparency in governance, empowering individual voices and minority viewpoints, and democratizing the production and dissemination of information.

As promising as these possibilities are, the emergence of the Internet and digital technologies does not in itself constitute a one-way road towards political liberalization. The ideas and debates of the blogosphere are not effectively open to all. Many have no access to the Internet, and linguistic obstacles prevent most from easily tapping into the full range of ideas available online. Furthermore, effective engagement in the field of ideas requires technical skills and media savvy, which are not uniform even among those with regular access to the Internet. Moreover, governments have acted to limit the influence of this digitally-mediated public sphere. Numerous countries in the Arabic world have turned to filtering political speech on the Internet that they deem objectionable. In Egypt, where there is no filtering, bloggers have been arrested and imprisoned for their writing.[36] Government authorities continue to search for mechanisms to control cyberspace while activists and dissidents develop new ways to avoid these controls.

Even where digital tools might be used to wrestle power from the hands of authoritarian governments, it would be a mistake to assume this would naturally produce classically Western versions of liberal democracies based on individual liberties, freedom of belief and expression, and a secular political order. Hundreds of Egyptian bloggers forcefully advocate for human rights, freedom of speech, and an end to corruption and torture. But two of the strongest groups among them are radical leftists, the West's great enemy of the last century, and Islamists, feared by some as the great threat of the new century.

While we caution against simplistic versions of what could be called the 'techno-democracy' argument, there are more sophisticated formulations that deserve further research. The Muslim Brotherhood that mobilizes mindshare in the networked public sphere is no longer the same Muslim Brotherhood. As we see with advocacy organizations in the United States, or Shi'a religious students in Iran, the move to Internet modes of communication can alter the forms of organization among people committed to similar goals, ideas, and values. The

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[36] Ronald Deibert, John Palfrey, Rafal Rohozinski, and Jonathan Zittrain, *Access Denied: The Practice and Policy of Global Internet Filtering* (Cambridge: MIT Press, 2008) 276-279.

Internet does not just promise (or threaten) to change the balance of power among players on the field, it changes the field and changes the players too.[37]

This study comes at an interesting juncture in US relations with the Arab World, in the wake of President Obama's call for a "new beginning between the United States and Muslims around the world." At the heart of this new beginning is a plea for understanding between cultures, to "listen to each other; learn from each other," to dismantle gross stereotypes, and to prevent extremist views from setting the tone of cross-cultural relationships. There is ground for optimism towards making progress on these accounts in the Arabic blogosphere. This research indicates that extremist views occupy a very small proportion of the ideas and opinions found there. Instead it is a space populated with a broad diversity of views, many of which promote common international values such as free speech and human rights.

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[37] See Clay Shirky, *Here Comes Everybody: The Power of Organizing Without Organizations* (New York: Penguin Press, 2008).

APPENDIX A: NOTES ON METHODOLOGY

We used computational social network mapping in combination with human and computer content analysis to analyze the Arabic language blogosphere.

Baseline Data and Mapping

The basis of the social network analysis and blogs selection was a corpus of Arabic, French and English-language blog data collected since March 2008. We identified and collected data for over 35,000 Arab language blogs, excluding numerous user accounts for social network service 'hybrids' (which combine blog-like journal features with social network function like platform-specific friends lists and group memberships), like Windows Live Spaces and MySpace. The latter were found to form their own networks, mostly self-contained, linking very infrequently to blogs outside the particular service. Where journals were found on these services that did link to the wider blogosphere, they were tracked and remained part of the base collection used for the study.   Initially, the study envisioned mapping only Arabic language blogs, but it was quickly discovered that a large proportion of Arab bloggers write in English, and mixtures of English and Arabic, with no clear network division between the two languages (unlike English and Farsi, for instance, between which there is a clear division). A sizeable number of blogs also mix French and Arabic. Therefore, lists of hundreds of known English and French Arab blogs, from expert sources and a range of Arab-oriented content aggregators, were used to seed network-based 'snowball' techniques to identify additional Arab bloggers writing in these languages as well. Because of the difficulty of separating Arab from non-Arab blogs in these 'bridge' regions, there are a small number of blogs authored by individuals without geographic, ethnic or family ties to the region that are included in the network because they are heavily interconnected with the Arabic language blogosphere. Social network analysis was used to identify the most connected blogs, the top 6,451 of which were mapped to identify the core structures of the Arabic blogosphere, create visualizations, and identify blogs for human and computational content analysis. The map of the Arabic blogosphere is plotted using the Fruchterman-Rheingold algorithm, which employs a 'physics model' approach in which blogs that are more densely connected are drawn together into clustered 'network neighborhoods.' The color of the blogs results from 'Attentive Cluster Analysis,' in which the linking histories of blogs are compared statistically in order to identify groups sharing similar preferences for linking to online resources.

Content Analysis

Once the network map was established, we next employed a mix of computer text and metadata analysis with human content analysis to determine basic characteristics of bloggers and their preferred topics across the network. The goal was to produce baseline estimates and findings that might inform more rigorous, targeted follow-on research.

- Computer text analysis: Using several types of lists, we searched full text of blog posts and compared the relative frequency of use of various words and terms across the clusters of the blog map. The three types of lists were: a.) all individual words in the text; b.) a list of over 200 terms, names and phrases chosen by expert advisers to represent key ideas and political actors; and c.) a list of over 53,000 Arabic language terms extracted from Arabic language Wikipedia, for which English language articles also exist. Aggregate cross-network use of key words/text (for example, *Israel*, *America*,

Gaza, Al Qaeda) was considered a rough indication of overall levels of discussion of key issues. Patterns in the use of these terms by various clusters were used to infer topical preferences of *attentive clusters,* with high-frequency terms considered indications of a particular cluster's interests and chosen topics relative to other clusters.

• Human blog coding: A sample of over 3300 blog URLs from across the map, as well as a group of blogs not included in the map (used for comparison), were coded from April 2008 to March 2009 using an online tool created by the Berkman Center. Data for all 4,370 blogs coded are included in the report, since differences between the results for the two data sets were minimal (differing at most 1%-3%, if at all). Ten Arabic-speaking researchers read blogs and coded them according to two standard scripts for blogs (attached as Appendix B). Outlinks, sources linked to by bloggers (usually Web sites, but also highly-linked blogs), were also coded with a separate script which is also included in Appendix B. Coders came from a range of countries in the region including Iraq, Egypt, Palestine, Kuwait, and Saudi Arabia, as well as Arabic speakers from Pakistan and the United States. The coding was initially intended to collect basic demographic data and topic data to supplement the computer text analysis, as well as to provide a richer qualitative sense of the discourse in Arab blogs. The latter was accomplished in part through the collection of text descriptions of the blogs, in which the research assistants were asked to describe blogs in one or several sentences. These descriptions were very informative. The collection of categorical data presented a number of challenges that suggest issues for methodological improvement in follow-on research. First, blogs were coded 'live,' i.e. the coder read the content that was on the front page of the blog at the time they coded it. Because of this, topics could fluctuate across the network over the time period of the study, which introduces noise into the results. Given that the posts read by researchers for a given blog might have differed, this variation impacts the inter-coder reliability measures for the data collected. Second, because of differences in dialects, slang and national aspects of culture and politics, not all coders could be equally sensitive to important aspects of speech in blogs in different parts of the network. This suggests the need for a combination of more specific questions and coders with special knowledge of key countries. While the latter presents its own problems for coding validity, we have found that the most valuable qualitative insights come from those coders attuned to the subtleties of the discourse they are monitoring. Given the repressive nature of some of the societies in question, the role of 'dog whistle' politics is likely to be strong. Third, some of the topics we cover, such as attitudes toward extremist violence, involve concepts with very different interpretations across the Arab world. Many of these regional variations are captured in the qualitative descriptions, but there are challenges to framing categorical attitude questions very specifically. For these reasons, we avoid drawing any conclusions in this study based solely on the data collected through human coding but instead draw on multiple sources of information, including the human coding, text analysis and network analysis, which is constructed on linking patterns of the blogs in the network.

APPENDIX B: CODE SHEETS

Arabic Extended

Is this URL a blog? (If not a blog, click no and jump to complete item at the bottom of the page)

🔘 yes

🔘 no

What is the nationality of the blogger?

[   ]

Is the blogger located in his/her country, or an expatriate?

🔘 in his/her own country

🔘 expatriate (outside the Arab world)

🔘 expatriate (in another Arabic-speaking country)

🔘 don't know

Where are they located specifically (country, city, town, region)? If you list a city or town, you must also list the country. Please write 'dk' (for 'don't know') if you can't tell anything about where they are.

[   ]

Does the blogger reveal their name, or write anonymously?

🔘 uses name

🔘 anonymous (including pseudonyms)

Is the blogger male or female?

🔘 Don't Know

🔘 Female

🔘 Male

Can you estimate the blogger's age? (select the most appropriate category)

- ◯ 18-24 (student age)
- ◯ 25-35 (young adult)
- ◯ 36-60 (adult)
- ◯ over 60 (older adult)
- ◯ don't know

Please read the blog first, and then go back a second time for coding. The goal is to check off all topics that the blogger discusses, in the categories below. If the blog has a lot of posts, concentrate your reading and coding on the five to seven most recent posts. Check all topics that are discussed.

General Topics: Politics and Public Life

- ☐ International news
- ☐ Domestic news
- ☐ International policy
- ☐ Domestic political reform (advocating change within the current regime/system)
- ☐ Economic issues (gas prices, inflation, oil revenues, etc)
- ☐ Women's issues (rights, status, hijab, feminism, etc)
- ☐ Ethnic minority issues (rights, status, language, regional issues)

General Topics: Religion

- ☐ Islam (the Quran, theology, interpretation, history, etc)
- ☐ Sunni Islam (doctrine, thought, practice, leaders, etc.)
- ☐ Shiite Islam (doctrine, thought, practice, leaders, etc.)
- ☐ Sufism (doctrine, thought, practice, leaders, etc.)
- ☐ Personal religious thoughts and experiences
- ☐ Religious poetry
- ☐ Religions other than Islam
- ☐ Criticism of other faiths
- ☐ Interfaith dialogue

General Topics: Personal

☐ Personal diary (activities, private thoughts and reflections, etc)

☐ Single life (love, relationships, dating, etc)

☐ Family life (love, marriage, children, etc)

General Topics: Culture, History and Technology

☐ Movies and television

☐ Music

☐ Poetry, literature, and art

☐ Human Rights

☐ Western culture and values (criticism)

☐ Western culture and values (support)

☐ Technology (computers, software, blogging, etc.)

Specific Topics: Politics and International Affairs

☐ Domestic Political Leaders (Support)

☐ Domestic Political Leaders (Criticism)

☐ Foreign Political Leaders (support)

☐ Foreign Political Leaders (criticism)

☐ War in Iraq

☐ War in Afghanistan

☐ United States (Support)

☐ United States (Criticism)

☐ Palestine (Support)

☐ Palestine (Criticism)

☐ Israel (Support)

☐ Israel (Criticism)

☐ Terrorism (support)

☐ Terrorism (criticism)

☐ Political Islam (support)

☐ Political Islam (criticism)

Please list any additional topics (one or a few words separated by commas)

Notes or observations: Please type your general observations (1-3 sentences) about the blog or blogger: What stands out most about this blogger?

Arabic Filter

What type of site is this? (add new type by using the field below.)

- ☐ blog
- ☐ blog service
- ☐ news (Web site for offline news, newspaper, radio, etc.)
- ☐ news (online only)
- ☐ portal/directory
- ☐ business
- ☐ individual: politician
- ☐ individual: journalist
- ☐ individual: poet, writer, intellectual
- ☐ individual: other
- ☐ organization: advocacy
- ☐ organization: ngo
- ☐ organization: other
- ☐ political party
- ☐ web 2.0 (social network, user generated content, etc)
- ☐ government
- ☐ online petition
- ☐ Web site educational services
- ☐ picture uploading services
- ☐ Web site that facilitates creating Internet groups
- ☐ collection of variety of links to individual things
- ☐ search engine
- ☐ other

Notes or observations: Please type a short description (1-3 sentences) of the blog, blogger or Web site: What stands out most?

If the site is a blog, please continue. Otherwise click 'complete item' and go to the next site.

What is the nationality of the blogger?

Is the blogger located in his/her country, or an expatriate?

○ in own country

○ expatriate (outside the Arab world)

○ expatriate (in another Arabic-speaking country)

○ don't know

Where are they located specifically (country, city, town, region)? Please write 'dk' (for 'don't know') if you can't tell anything about where they are.

Does the blogger reveal their name, or write anonymously?

○ uses name

○ anonymous (including pseudonyms)

Is the blogger male or female?

○ Don't Know

○ Female

○ Male

Can you estimate the blogger's age? (select the most appropriate category)

- under 18
- 18-24 (student age)
- 25-35 (young adult)
- 36-60 (adult)
- over 60 (older adult)
- don't know

Arabic Outlinks

Is this site (mainly) in Arabic?

☐ yes

☐ no

What type of site is this?

☐ blog (of any type: individual, group, company, etc.)

☐ news/info/media (including mainstream media, web-only)

☐ social network (like MySpace, Facebook)

☐ social media (users contribute media or nominations, like Flickr, YouTube, Digg)

☐ portal/search/directory

☐ organization (not-for-profit, NGO, etc)

☐ government Web site

☐ political party/campaign Web site

☐ commercial: company site (information about the company)

☐ commercial: retail, ecommerce (consumers can buy something)

☐ individual person's site (but not a blog, e.g. many book authors, artists have these)

☐ educational site (including schools and universities)

☐ polling/newswires/data/commercial analysis

☐ online discussion forums/bulletin board

☐ other

Does the site focus on any of the following topics or issues?

☐ politics

☐ religion

☐ news

☐ arts/literature

☐ women's issues/rights

☐ minority issues/rights

☐ pop culture (music, tv, movies)

☐ sports

☐ technology

What country is this site primarily concerned with?

○ Algeria

○ Bahrain

○ Chad

○ Egypt

○ Eritrea

○ Iraq

○ Israel

○ Jordan

○ Kuwait

○ Lebanon

○ Libya

○ Mauritania

○ Morocco

○ Oman

○ Qatar

○ Saudi Arabia

○ Somalia

○ Sudan

○ Syria

○ Tunisia

○ United Arab Emirates

○ United States

○ United Kingdom

○ Yemen

○ Pan-Arabic/Multinational

○ Other

If other, please indicate the country.

Notes or observations: Please type a short description (1-3 sentences) of this site.