

Propaganda, Fake News, and Fake Trends: The Weaponization of Twitter Bots in the Gulf Crisis

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To address the dual need to examine the weaponization of social media and the nature of non-Western propaganda, this article explores the use of Twitter bots in the Gulf crisis that began in 2017. Twitter account-creation dates within hashtag samples are used as a primary indicator for detecting Twitter bots. Following identification, the various modalities of their deployment in the crisis are analyzed. It is argued that bots were used during the crisis primarily to increase negative information and propaganda from the blockading countries toward Qatar. In terms of modalities, this study reveals how bots were used to manipulate Twitter trends, promote fake news, increase the ranking of anti-Qatar tweets from specific political figures, present the illusion of grassroots Qatari opposition to the Tamim regime, and pollute the information sphere around Qatar, thus amplifying propaganda discourses beyond regional and national news channels.

Keywords: bots, Twitter, Qatar, computational propaganda, Gulf crisis, Middle East

The Gulf Crisis: Propaganda, Twitter, and Pretexts

The recent Gulf crisis, in which Qatar was isolated by Saudi Arabia, Egypt, Bahrain, and the United Arab Emirates (UAE), has been accompanied by a huge social media propaganda campaign. This isolation, termed by some as “the blockade,” is an important opportunity for scholars of global communications to address what Oliver Boyd-Barrett (2017) calls the “imperative” need to explore “characteristics of non-Western propaganda” (p. 1016). One aspect of this propaganda is the deployment of thousands of Twitter bots, the study of which has generally been confined to the United States, Mexico, China, and Russia. To address these two gaps, this study documents, identifies, and explores the role of these propaganda bots on Twitter during the Gulf crisis.

The blockade began in June 2017. Tensions originally flared when the state-run Qatar News Agency posted controversial statements on May 23, 2017. These comments were allegedly made by the Qatari head of state, Emir Sheikh Tamim bin Hamad Al Thani. The comments affirmed the good relationship between Qatar and several other countries and organizations, including Iran, the Muslim

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Brotherhood, and Hamas. The statements stood in contrast to the conventional foreign relations of the Gulf Cooperation Council (GCC), which holds such organizations and countries in relative contempt—at least publicly. Al Thani also allegedly alluded to Iran's importance as a regional power—an apparent dig at attempts by King Salman bin Abdulaziz of Saudi Arabia and President Trump of the United States to isolate Iran during the summit held in Riyadh on May 20–21, 2017. Although some of these comments might seem innocuous, when viewed within the prism of GCC antipathy toward Iran, the comments were interpreted as Qatar defecting from GCC foreign policy. Qatar denied that Al Thani made such comments, claiming that the country's various social media accounts and national news broadcaster had been hacked.

Following Qatar's claims of a hack, the UAE, Egypt, Saudi Arabia, and Bahrain (known as "the Quartet") were quick to dismiss this as an excuse and mobilized sanctions against Qatar. They accused Qatar of supporting alleged terrorist entities such as Hamas, the Muslim Brotherhood, and Iran. The Quartet then launched what Kristian Coates Ulrichsen (2017, para. 1) described as a "sustained media onslaught" against Qatar. The Saudi newspaper *Okaz* led the charge with the headline "Qatar Splits the Rank, Sides With the Enemies of the Nation" (Maclean, 2017, para. 7). The unambiguous condemnation of Qatar by various state-controlled media outlets in the blockading countries was undoubtedly designed to show that the Quartet's actions were in response to a provocation. Indeed, by emphasizing Qatar's alleged transgression, the four nations were attempting to position themselves on the moral high ground in the crisis.

However, the ferocity of the media onslaught as well as the history of tensions between Qatar and its neighbors indicate that the emir's comments and alleged hack were a convenient pretext on which to hang tensions. Here, pretexts are situations where governments use "the media to whip up patriotic fervour, boost support for the authorities, and marginalize and/or ridicule dissent and dissenters when these are not actively criminalized by the State" (Boyd-Barrett, 2016, p. 30). Boyd-Barrett adds that "Pretexts proffered to the media for intervention in particular cases are frequently wrong, provoked, and even fabricated. Authorities rely heavily on supposedly 'independent' (but colluding) mainstream media for the widespread dissemination of their inaccuracies and deceptions" (p. 30). Pretexts provide an important framework for propaganda, because they portray to citizens that the object of hostility is the natural aggressor and that the manufacturer of the pretext is the moral superior acting in response to an outrageous act. Although pretexts are often falsehoods, they need not be false to constitute pretexts. Gibbs and Kahin (as cited in Boyd-Barrett, 2016, p. 31) make a distinction between "orchestrated pretexts," which are created as an excuse for aggression, and "pretexts of convenience," or "what McGeorge Bundy once described as 'passing streetcars'." These passing streetcars or pretexts of convenience are opportunities that "are jumped upon in order to manage public opinion and push ahead with already prepared policies that hitherto had been too unpopular to contemplate" (Boyd-Barrett, 2016, p. 31). Morgenthau argues that it is "the responsibility of elites to shape the public opinion that they need to support their already existing policies" (as cited in Boyd-Barrett, 2016, p. 31).

By virtue of their purpose, pretexts are inextricable from propaganda, which is defined by Jowett and O'Donnell (2015) as "the deliberate, systematic attempt to shape perceptions, manipulate cognitions, and direct behavior to achieve a response that furthers the desired intent of the propagandist" (p. 7). Propaganda distorts or limits the availability of facts, redefines contexts, and masks the transparency of

political motivations. It is designed to undermine the democratic public sphere by suppressing the flourishing of an informed citizenship (Harrop, 2004). Such propaganda, irrespective of political structure, can be characterized by name calling, a selective focus on atrocities carried out by the enemy, misdirection, and the omission of narratives that may contradict the propagandist (Zollman, 2017). In conflict, propaganda is often created to provoke animosity toward certain entities and demonize specific groups of people or nations (Lasswell, 1971). Lasswell claims that, in its crudest form, this type of propaganda often portrays enemies "as a menacing, murderous aggressor" (p. 195). In such cases, evidential claims supporting the nefariousness of the enemy frequently do not relate to the factual record (Bakir, Herring, Miller, & Robinson, 2018). Propaganda "presupposes a moral right to wage war on, or 'liberate,' the enemy, and attempts to establish the crusade of civilizing goodness as a higher norm than respecting the rights of alleged 'evil-doers'" (Harrop, 2004, p. 311). It presents a one-sided account of affairs that can include bias, obvious falsehoods, deliberate misinformation, and unsubstantiated allegations. Harrop (2004) contends that "Regions, countries, peoples, and leaders are polarized by propaganda as good and evil" (p. 311). Consequently, the propaganda-producing country or entity positions itself as having the moral right to exact its sanctions against evildoers. To establish this duality between right and wrong, pretexts provide a useful foundation on which the perceived enemy commits a moral transgression. Part of creating this illusion of moral right is fabricating a pretext that transgresses or violates certain norms against which to react. Such pretexts are more commonly studied in Western media. For example, prior to the 2003 invasion of Iraq, Western governments used Saddam Hussein's alleged possession of weapons of mass destruction as a pretext for war. These allegations were later discovered to be false or exaggerated (Boyd-Barrett, 2017).

Passing streetcar or not, the alleged wrongdoing of Qatar was the pretext invoked by many regional commentators based inside the Quartet. Given that claims of being hacked are frequently used as a difficult-to-substantiate defense, numerous analysts outside Qatar understandably dismissed the hacking story as improbable. Hussein Ibish (2017), writing in the UAE-based paper *The National*, denounced the hacking claims as "far-fetched," instead noting that "the current controversy between Qatar and several of its key Gulf Cooperation Council allies has its proximate cause in remarks attributed to the emir of Qatar, Sheikh Tamim" (para. 3). Similarly, writers such as Abd al-Zirah bin Abd al-Aziz al Marjan (2017a & 2017b) wrote a number of pieces in *Okaz*, insisting that the hack was a falsehood, reifying and affirming the hack discourse in the Saudi mediascape. In subsequent reporting, either the emir's comments or the hack have served the basis for the periodization of the crisis. Here, *periodization* refers to the temporal period in which the crisis is defined by events and subsequent reporting. The emir's alleged comments therefore provided the pretext for the isolation of Qatar by a coalition of other Arab states. Pretexts are thus important in determining this periodization, because they signal the impetus, justification, or event on which the retaliation is legitimized.

The Weaponization of Social Media in the Gulf

Pretexts have conventionally been directed through television networks and newspapers, but today social media creates new frontiers for pretext delivery. The social media landscape at the outbreak of the crisis was not dissimilar to elsewhere in the Middle East and the rest of the world. Indeed, the Internet and social networking sites (SNS) in the Gulf have become spaces of contestation for

governments, political parties, individuals, and civil society groups alike. New technologies have been leveraged to pursue competing objectives, ranging from the promotion of social justice and democracy to the enactment of control, surveillance, and repression. Without reducing the debate of social media and the Internet to a utopian versus dystopian binary, or indeed a social constructivist versus technological deterministic argument, emerging evidence highlights how social media is used in a myriad of ways, depending on different regional, political, and regulatory contexts. In authoritarian regimes in the Middle East, where government control of media outlets and the Internet has always been pervasive, the dystopian potential of technology is increasingly evident. The Arab uprisings that began in 2010 have brought renewed attention to this issue, as have the rise of entities such as Daesh, whose use of social media has been the subject of considerable focus in certain fields, including security studies. Emerging research finds that governments have developed techniques and contracted Western expertise to use the Internet to locate, intimidate, and target critics of their regimes (Bahrain Watch, 2015; Jones, 2013; Marczak, Scott-Railton, Paxson, & Marquis-Boire, 2014). The UAE, for example, has collaborated with Israeli companies to trial new spyware technologies on UAE citizens (Marczak & Scott-Railton, 2016), and news apps have been used to target religious communities in Saudi Arabia (Marczak, 2018). Meanwhile, in the growing surveillance-industrial complex, many Western organizations exploit loopholes to sell technologies that can exploit social media as delivery systems for spyware (Privacy International, 2016). In Bahrain, social media has been rife with trolls, many of which have utilized sectarian and polarizing discourses to augment regime divide-and-rule strategies.² Despite various nomenclature used to describe malicious online behavior, several other methods are worth mentioning. Astroturfing, a technique used by propagandists to simulate grassroots movements in favor of a cause, is becoming increasingly common. Darwish, Alexandrov, Nakov, and Mejova (2017) document in great detail the prevalence in the Egyptian Twittersphere of “seminar users”—accounts that actively spread pro-regime propaganda. From water armies (large numbers of people organizing coordinated messaging campaigns) to sock-puppet accounts (accounts run by someone other than the publicly stated name), social media can be and has been used as a tool to enable surveillance, disinformation, cyberbullying, trolling, and many other activities that can be deemed a form of control or political repression (for a useful overview of the types of malicious social media behavior, see Darwish et al., 2017).

Yet the Gulf regimes have attracted relatively little attention in the study of propaganda, whether online or otherwise. As innovation in malicious techniques grows, increased awareness among the public is important. This awareness has been evident in the Gulf crisis, where Qatari citizens felt so targeted by malicious propaganda on Twitter that, at one point in August 2017, the hashtag “don’t participate in suspicious-looking hashtags” was trending. In part, this was a reaction to the rise of perceived fake news, but it was also a response to the relatively unfamiliar techniques of disinformation being deployed online. Chief among these techniques was the use of Twitter bots to disseminate propaganda aimed at demonizing Qatar and its government.

² *Trolls* are usually defined as anonymous accounts that engage in aggressively contrarian or bullying behavior.

Bots and *Dhabāb Iliktrūniya* (Electronic Flies)

Bots are increasingly being used to distribute propaganda (Shorey & Howard, 2016). Bots themselves are not inherently malicious. They are software programs designed to execute commands, protocols, or routine tasks—in this case, on the Internet. They exist online in enormous quantities and are created for various purposes, including “news, marketing, spamming, spreading malicious content, and more recently political campaigning” (Gilani, Farahbakhsh, & Crowcroft, 2017, p. 781). Some are arguably benevolent, such as those that automatically call out people who use racist terminology on Twitter (Munger, 2016). However, ever-improving artificial intelligence and automation demonstrate that software can be leveraged and exploited on an industrial scale, allowing for the automation of prejudice and discrimination. A growing phenomenon under scrutiny is the role of Twitter bots, often referred to in the Gulf Arabic dialect as *dhabāb iliktrūniya* (electronic flies).

In 2014, Twitter estimated that 5% of its users were bot accounts. Other studies have estimated this figure at around 10.5% (Chu, Gianvecchio, Wang, & Jajodia, 2012), and still others have found that 16% of Twitter accounts “exhibit a high degree of automation” (Zhang & Paxson, 2011, p. 102), with an additional 36.2% classified as cyborgs—that is, “bot-assisted human or human-assisted bot” (Chu et al., 2012, p. 811). Previous studies have noted that even in small numbers, bots can have a significant impact, including, for example, increasing the popularity of uniform resource locators (Gilani et al., 2017). Indeed, the dystopian and utopian framework common in studies of the Internet has affected the nomenclature in bot research, with distinctions being made between good bots and more malicious ones. As Ferrara, Varol, Davis, Menczer, and Flammini (2014) state, “While many bots are benign, one can design harmful bots with the goals of persuading, smearing, or deceiving” (p. 1). Indeed, “These bots mislead, exploit, and manipulate social media discourse with rumours, spam, malware, misinformation, slander, or even just noise” (p. 2).

According to Shorey and Howard (2016), social bots can attack activists and spread propaganda. Through the use of hashtag spamming and attempted trend creation (Gallagher, 2015), such bots are potentially harmful to civil society, because they impinge on free speech and distort the public sphere (Maréchal, 2016). Bots can drown out legitimate debate and pollute conversations with malicious, extraneous, or irrelevant information. This phenomenon has been documented in Mexico and Russia (Mowbray, 2014). As Marechal (2016) argues, “Hashtag spamming—the practice of affixing a specific hashtag to irrelevant content—renders the hashtag unusable. Artificial trends can bury real trends, thus keeping them off the public and media’s radar” (p. 5025). Erin Gallagher (2015) describes malicious bots as “weaponized censors” that can spam hashtags, intimidate opponents, issue death threats, and disseminate propaganda. Such bots are often referred to by other names, such as spam accounts, fake accounts, or, less accurately, trolls. Whereas trolls and sock puppets might be real people operating accounts, bots are generally considered to be software programs delivering automated content. Growing research examines the role of bots and how they may influence elections, and work has even been done thematically on *Star Wars* bots (Echeverria, Besel, & Zhou, 2017). However, research on propaganda bots in the Gulf is scarce, with the exception of studies by the author and Alexei Abrahams (Abrahams & Jones, 2018; Jones, 2016, 2017a, 2017b). Given bots’ malicious behavior and widespread use, identifying

bots in order to develop ways to combat them is imperative in raising awareness of disinformation and ultimately preventing it.

Moving Toward an Automatography

To examine the existence, evidence, and role of bots in the Gulf crisis, the purpose of this study is twofold. The first objective is to identify and analyze bots spreading political propaganda on Twitter during the Gulf crisis.³ The second objective is to assess bots' behaviors, potential impacts, and prevalence. The methods emphasize three objectives: (1) identifying bots, (2) determining the discourse of their propaganda, and (3) examining the bots' utility and potential impact. Although efforts have been made to determine the presence of "bots or not" (Davis, Varol, Ferrara, Flammini, & Menczer, 2016), these efforts have not always been uniform in their approach. It is important to note that there is much methodological plurality concerning bot detection. As noted by Pozzana and Ferrara (2018), current research falls into "three classes: (a) methods based on social network structure and dynamics; (b) systems based on crowd-sourcing and human annotations; (c) learning algorithms based on informative features that separate bots from humans" (p. 8). Tools such as BotOrNot and DeBot have been devised to ascertain whether specific social media accounts are bots. However, such methods have been criticized for their emphasis on account-level detection, which is expensive and less adaptive to detecting large numbers of bot accounts (Kudugunta & Ferrara, 2018). These methods are also inefficient for detecting or determining the presence of large and polluting bot swarms. A bot swarm is broadly defined as a group of accounts that displays very similar characteristics and works to pollute hashtags or topics with propaganda. More recent approaches tend to use both account-level and tweet-level metadata to identify bots (Kudugunta & Ferrara, 2018). Such methods include correlation techniques to identify bots tweeting at specific times to detect patterns in the sequencing of accounts (Chavoshi, Hamooni, & Mueen, 2016). Sentiment analysis has also been shown to be effective in identifying bots (Dickerson, Kagan, & Subrahmanian, 2014). Despite the variation in detection methods, almost all of them use application programming interfaces (APIs) or account-level data to find recognizable account "fingerprints" or anomalies that indicate whether an account is a bot. The more similarities that exist between accounts across various categories of metadata, the higher the likelihood they are automated or are bots.

Using a combination of human-labeled metadata with individual account cross-checking, this research falls broadly into the second category identified by Pozzana and Ferrara (2018) of computer-assisted bot detection. To identify bots, a form of hashtag and keyword-based sampling was used. This technique relies on groups of bots manipulating similar hashtags. This hashtag-based approach enables one to identify specific bot networks via certain anomalous features. Hashtags were chosen if they trended in Twitter's "trending topics" in Qatar, Saudi Arabia, Bahrain, or the UAE. Trends are arguably the most salient and relevant hashtags, as determined by Twitter's algorithm. The relevant search terms and sample sizes used throughout this study are highlighted in Table 1.

³ Of course, those who spread propaganda need not be bots, although the focus of this study was limited to bots and their instrumentalization.

Table 1. Summary of Search Terms and Samples That Form the Basis of the Data for This Article.

Sample search term	Sample size (total, including duplicates)*	Unique bot accounts (excluding duplicates)*	Sample date
#قناه_الجزيره_تسيء_للملك_سلمان [Al Jazeera insults King Salman]	33,000	4,375	June 28, 2017
قطر [Qatar]	29,444	5,000	May 27, 2017
قطر [Qatar]	9,786	1,769	January 1, 2018
#قطر_خزينة_الارهاب [Qatar is the bankroller of terror]	15,000	1,500	May 20, 2017
#خفض_مستحقات_الجنود_القطريين [Reduction in benefits to Qatari soldiers]	22,627	5,000	July 7, 2017
#نطالب_باغلاق_قناة_الخزيرة [We demand the closing of the channel of pigs]	8,107	7,542	June 23, 2017
#قطرايل_والخيانة [Qatarrael and its treachery]	15,712	2,000	May 29, 2017
قلوبنا_مع_تميم_لا_الحمدين [Our hearts are with Tamim but not the two Hamads]	2,050	1,050	January 12, 2018
#ارحل_ياتميم [Leave Tamim]	11,054	2,100	August 22, 2017

Note. The hashtags here are certainly not exhaustive. Hundreds of hashtags contaminated by bots existed during the crisis, but for this study, a smaller sample was used to facilitate a more qualitative analysis.

* Values are approximate.

There is often a crossover. For example, the same hashtag can trend in both Saudi Arabia and Qatar, and this was frequently the case. Given that the focus of this study is demonizing propaganda, the hashtags selected were those containing some sort of attack against either a person or entity. Other keywords, such as *Qatar* (the target of the blockade), were chosen to capture discourse on Twitter about Qatar in general. In this regard, the demands from the Quartet provide a useful reference point from which to check likely discourses. Chiefly, the propaganda is related to the following demands made by the Quartet:

that Qatar reduce its political ties with Iran; stop contacting political terrorist opposition in Bahrain, UAE, Saudi Arabia, and Egypt; shut down critical media, including Al Jazeera, Arabi21, Rassd, Al Araby Al Jadeed, Mekameleen, and Middle East Eye; and sever ties with “terrorist” or “ideological organizations” such as the Muslim Brotherhood, Daesh, Al-Qaeda, and Fateh al-Sham (“Arab States,” 2017).

Samples were gathered from Twitter’s streaming API between May 2017 and January 2018 using Twitter Archiver, a tool developed by Amit Agarwal. Twitter’s streaming API is useful because it allows one to gather bot tweets as quickly as possible, before they can be deleted. Although millions of tweets were collected throughout the course of this research, this article focuses on the samples documented in Table 1. This decision was necessary to strike a balance between breadth and depth.

A limited nexus of quantitative data points proved crucial to anomaly detection—namely, the account-creation date and, to a lesser extent, the platform or application the account is tweeting from. The creation date of bots in batches is perhaps the most crucial step in the initial identification of bots. To achieve the impact desired by bot masters, whoever is creating the bots must often do so in large quantities. This is primarily because new accounts with few followers and little influence must rely on tweeting in rapid succession to create trends. Because of this, there are often huge spikes of accounts created on the same day, making creation-date anomalies a key data point. The human-labeled bot-identification method developed here has been fed into machine-learning tools in a separate study, with recall success rates of between 95% and 100% (Abrahams & Jones, 2018).

A qualitative analysis provided a useful means of verifying whether such accounts were likely to be bots. This analysis included identification of the following: similarities in the number of account followers, similarities in tweets sent or tweeted, the “generic-ness” of the profile, and the level of interaction of the accounts with others on Twitter. To convey this analysis visually, it has been illustrated throughout using diagrams generated with Tableau.

In addition to identifying bots, this work studies the content and behavior of the bots in relation to the context of the crisis, making it more of an automatography as opposed to a strictly bot-identifying approach. It is not a virtual ethnography per se but rather a study of automatons—hence the term *automatography*. Studying networks, or indeed communities, of bots by observing and examining their behaviors over time and in specific contexts yields information about not only their existence but also why they exist. A thematic content analysis has also been carried out on some of the accounts. This has been implemented on the content of the tweets, whether textual or visual, and in their biographies. As such, this work is not presented in the style of many computer science papers on bot studies; instead, it combines hashtag sampling and bot identification with closer examinations of bot behaviors in order to explore their potential ramifications for the Gulf crisis.

Results: Propaganda and Bots

The Gulf crisis had its temporal logic rooted in the hacking pretext. However, the controversy surrounding this event was precipitated by considerable online bot activity against Qatar. Generally speaking, the hashtags that tended to reveal the existence of bots were those that ostensibly appeared to

be Saudi-based, according to the user input locations on Twitter. Interestingly, Twitter bots spreading anti-Qatar propaganda existed before the pretext, or what political analyst Hussein Ibish (2017, para. 3) called the “proximate cause” of the crisis. On May 21, 2017, three days before news broke of the emir’s alleged comments, the hashtag “Qatar the bankroller of terror” was trending. Scholar Maryam Al-Khater (2017) noted similar anti-Qatar trends in 2013, although it is not clear how many of these were bots. Nonetheless, in a sample of approximately 33,000 tweets extracted on May 28, 2017, one bot swarm within the sample was set up in April 2017—seemingly with the sole purpose of tweeting against Tamim and the Qatari royal family. Indeed, an examination of the bots’ biographies reveals that they were all in opposition to the Al Thani family and the Qatari government. Table 2 shows typical examples of the biographies from the 234 accounts identified as being set up in April 2017. The themes of the biographies resemble the demands made of Qatar by the Quartet. This finding indicates that some entity, institution, organization, or government had prepared an anti-Qatar social media campaign prior to the emir’s alleged comments. This social media campaign, in the form of bots, was subsequently deployed after the news broke of the emir’s alleged comments.

Table 2. A Sample of the Translation of the Bot-Swarm Biographies Established in April 2017 (Many Accounts Duplicated These Biographies).

	Description
1.	Qatari citizen. Make Twitter a platform to defend your land and country. Fight the traitors and mercenaries of the Al Thani family.
2.	Qatari opposition against oppressive rule. Down with Al Thani rule. Against normalization.
3.	Expert in strategic affairs and politics and rights of the citizen. Down with the traitorous Al Thani.
4.	Down with the Tamim’s dictatorship.
5.	The Egyptian security forces reveal that a Qatari officer was involved in financing the Muslim Brotherhood’s monitoring network.
6.	Shaykh Yusuf al-Qaradawi, who is considered the global spiritual leader of the Muslim Brotherhood, has been welcomed by Al Jazeera.*

* Yusuf al-Qaradawi is an Islamic scholar accepted by many as an important and leading intellectual force in the Muslim Brotherhood.

Before and After the Pretext

Following the outbreak of the crisis, a random sample of Arabic tweets containing the word *Qatar* was taken on May 27, 2017, to assess the presence of bots mentioning Qatar. This sample did not discriminate, and any Twitter accounts mentioning the word *Qatar* within a specific time frame were included. Of the random sample of 29,444 tweets mentioning the word *Qatar*, a dramatic spike in account-creation dates was witnessed following May 2017. As shown in Figure 1, the average number of Twitter accounts in the sample created between March 2012 and March 2017 was about 318 per month, whereas in May 2017 (the month of the crisis), 3,470 new accounts were created.

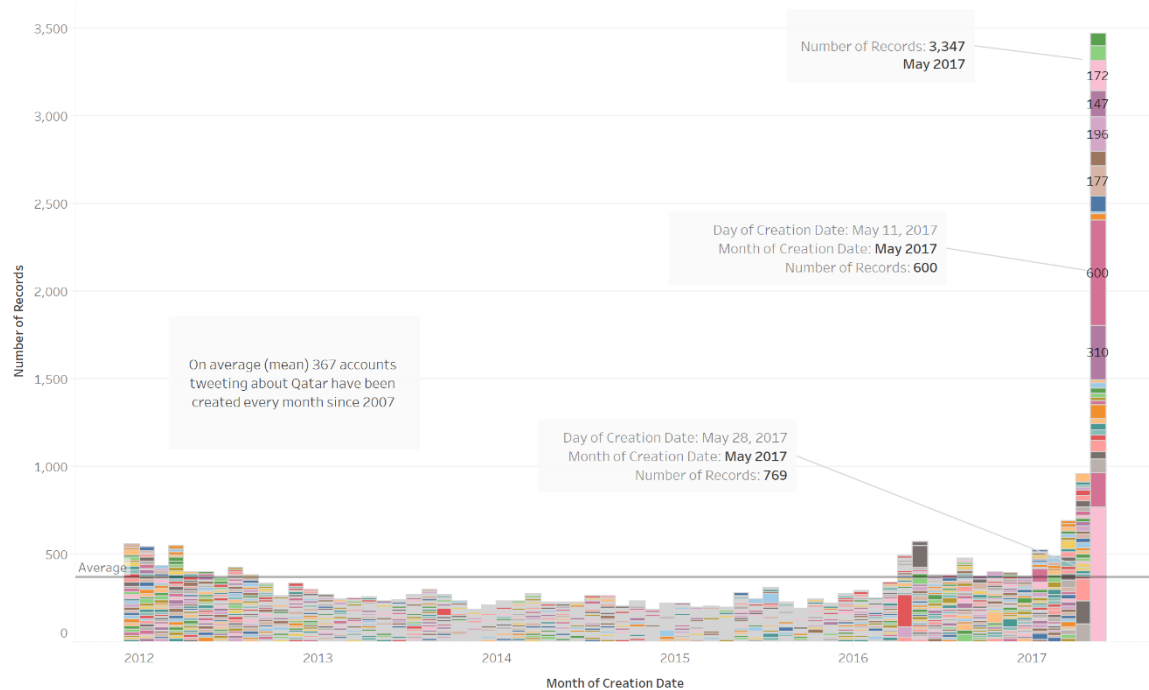


Figure 1. Twitter accounts mentioning Qatar by month and year of creation, sampled May 27, 2017.

While these figures alone are dramatic enough to indicate suspicion with little equivocation, an examination of the accounts' metadata reveals similarities in the accounts that indicate they were set up by the same institution or organization. That is, most of the organizers used Twitter Web Client, did not interact with other accounts, and had similar numbers of followers. They also all had generic, poorly formatted images on their profiles.

A closer examination of the accounts created in May 2017 (see Figure 1) reveals that most of these bots were designed to promote the opinions (by retweeting) of notable public figures criticizing Qatar. These figures included Turki Al-Sheikh, an advisor to the Saudi Arabian Royal Court, and Khalid Al-Hail, an official spokesman for the Qatari opposition who rose to prominence during the blockade. In the sample of 29,444 tweets mentioning Qatar, approximately 2,116 were retweets of Turki Al-Sheikh's tweet: "It is hoped that the Qatari government respond to the legitimate demands of the family of Shaykh Abd al-Wahhab, as is described in the statement they published" (Al-Sheikh, 2017). This is a seemingly personal criticism by the Al-Sheikh family of Qatar's renaming of the Grand Mosque to the Imam Muhammad ibn Abd al-Wahhab Mosque. Approximately 1,600 of these retweets were carried out by bots. Indeed, 1,087 of the accounts that retweeted them were created in May 2017 alone. Although there was some evidence of bots retweeting neutral or conciliatory tweets within this particular sample, the majority contained anti-Qatar sentiments.

This phenomenon continued to some degree until at least early 2018. A cursory examination reveals that bots were still involved in Twitter discussions using the word *Qatar* in January 2018. In a sample of approximately 9,786 tweets from unique accounts taken on January 1, 2018, about 18% (1,769) were bots. As shown in Figure 2, a large spike occurred in September 2017 in the creation date of bots.



Figure 2. Twitter accounts mentioning Qatar by month and year of creation, sampled January 1, 2018.

Much of this propaganda was directed at the Iranian regime, although Qatar was included as a hashtag. This is perhaps unsurprising: Since the beginning of the crisis, one of the tropes used by the Quartet has been to accuse Qatar of supporting alleged Iranian-backed terrorism.

One might expect to still see high numbers of accounts in January 2018 from previous periods of spikes in bot creation (see Figure 2). However, because Twitter suspends a lot of these accounts, they cease to become active after a time. As a result, the type of graph that tends to appear with bot-laden samples shows a high distribution and surge of accounts to the right. This indicates that the process of creating or purchasing Twitter bots is an ongoing and continuous phenomenon. It might also suggest that new bot swarms are contracted and set up ahead of specific campaigns, with some lag before the bots become active.

Manipulating Trends and Megaphoning Hashtags

Hashtags usually represent ad hoc or praetor hoc publics (i.e., people coming together during or ahead of a particular event). Hashtags function as a locus that highlights an active and salient discussion around a specific occasion or topic. However, when hashtags are made prominent by bots, they shift from being genuine ad hoc publics to ad hoc public relations, reflecting the particular agenda of the propagandist paying for and/or organizing the campaign. Without an explicit statement that the hashtags have been deliberately created by a specific organization or entity, it is likely that they are being passed off as organic, ad hoc publics (i.e., real people). Many hashtags taken from the "trending topics" feature of Twitter in the period under study show evidence of bot activity. Those included in this study have been chosen due to the high prevalence of bot activity.

Most of the hashtags analyzed contained broadly anti-Qatar themes that relate to the official Quartet demands. Some contain tropes that could theoretically provoke domestic audiences in the Quartet countries or turn Qataris against their own government. Al Jazeera was frequently the target of criticism. On July 19, 2017, the hashtag "Al Jazeera is the source of lies" was trending in Saudi Arabia. On June 23, 2017, the hashtag "We demand the closing of the channel of pigs" was trending.⁴ Of the 8,107 tweets on the latter hashtag, approximately 5,800 (71%) were produced by 2,831 bot accounts. Of these 2,831 accounts, there were about 10 distinct bot swarms.

On May 28, the hashtag "Al Jazeera insults King Salman" began trending after Al Jazeera tweeted a cartoon that was critical of King Salman. A sample of 33,000 tweets from the hashtag were downloaded within a six-hour window. After the removal of duplicates, around 21,387 unique accounts were identified. Up to 4,375 of these accounts within the sample (around 20%) appeared to be automated. Within this bot swarm were around seven unique bot groups. Bots on this hashtag were also sharing well-designed infographics that displayed Qatar's various alleged transgressions. Most of these images highlighted the well-publicized grievances of the coalition, especially those related to the closing of various media outlets. Some superimposed Tamim's face on the Iranian flag (see Figure 3).

⁴ The Arabic word for pigs, *al-khanzira*, is a derogatory term that is phonetically one sound away from the spelling of Al Jazeera (*al-jazira*).



Figure 3. Infographic showing Tamim's head superimposed on the Iranian flag.

All the infographics had a similar aesthetic quality, containing a limited color palette and lists of various derogatory entries about Qatar. Figure 4 is a typical example of this. It is titled "Qatar Media Snake" and lists numerous journalists and public figures based in Qatar, including Wadah Khanfar, Azmi Bishara, and David Hearst. It is interesting to note that while none of these figures has been singled out in the 13 demands made by the Quartet, all of them work for or have contributed to the outlets singled out in the demands.



Figure 4. Infographic entitled "Qatar Media Snake."

The themes that emerged in the tweets on the "Al Jazeera insults King Salman" hashtag tended to relate to the Quartet's demands (see Table 3).

Table 3. Thematic Analysis of Bot-Swarm Tweeting on "Al Jazeera Insults King Salman" Hashtag.

Approximate count	General theme	Example (translation)	Original Arabic text
357	General Qatari support for terrorism	Qatar supports terrorism through the channel of pigs (Al Jazeera).	قطر داعمة لارهاب عبر قناة الخنزيرة
161	Criticism of Qatari support for Israel	Qataris are the only Arab people who welcome Israelis with a fanfare.	القطريين الشعب العربي الوحيد الذي يستقبل الاسرائيليين في قطر بالطبول
106	Accusations that Qatar supports the Muslim Brotherhood	The Brotherhood are criminals who receive a lot of support from Qatar.	الأخوان المجرمين يتلقون دعم كبير من قطر
57	Accusations that Qatar supports Daesh	Daesh buys weapons with Qatari money.	داعش تمويل بالاسلحة من قطر
52	Criticism of Qatar for supporting Iran	Qatar supports Iran's terrorism.	قطر الظهر الداعم للارهاب الإيراني
55	Criticism of Qatar for supporting "Jews," often against Arabs	The Qatari government is traitorous and characterized by the traits of the Jewish dogs.	الحكومة القطرية حكومة خائنة و تتصف بصفات اليهود عيال الكلب
9	Criticism of Qatari support for Zionism	Al Jazeera is a tool in the hands of Zionism.	قناة الجزيرة وسيلة بيد الصهاينة
27	Criticism of Qatar as a source of discord	The goal of Al Jazeera is the spreading of discord between Arabs.	هدف الخنزيرة هو زرع الفتنة بين الدول العربية

Approximately 2,338 of these bot accounts were from a relatively sophisticated network that contained unique tweets in Fuṣḥa (formal, standardized Arabic that is used in newspapers and official communications as opposed to a specific Arabic dialect). About 1,000 of these tweets were coded to determine the nature of the rhetoric. While many were general hyperbolic exhortations of Qatar's shortcomings (e.g., "Qatar is the patron and supporter of everything that destroys and devastates the Arab World"), specific themes emerged that were similar to those present in the Quartet's demands. A large number of tweets criticized Qatar for supporting some form of alleged terrorist organization or entity, ranging from the Muslim Brotherhood and Hamas to Iran and Daesh.⁵ Similarly, there were accusations that Qatar was compromising its "Arabness" by supporting Israel and/or Zionism. Indeed, one of the hashtags analyzed during this study was a portmanteau of Qatar and Israel: Qatarael. Arabness was also invoked in 283 different tweets, undoubtedly an attempt to appeal to the widespread opposition in the Arabic-speaking world to Israel's abuse of Palestinian human rights. Some of these tropes used virulently anti-Semitic language, such as "Jewish dogs."

Creating Fake News: Using Bots as Fake Qatari Grassroots Opposition

The ability of bots to manipulate Twitter's trending topics and potentially shape international news discourses is evidenced by the aforementioned hashtag "Al Jazeera insults King Salman." Despite the sample showing that about 20% of the accounts may have been bots spreading anti-Qatar propaganda, BBC Arabic's trending service picked up the story, stating that it was the highest trend in the region (BBC Arabic Trending, 2017a). On July 7, 2017, BBC Arabic (BBC Arabic Trending, 2017b, para. 1) also reported that a hashtag, translating as "Reduction in the benefits of Qatari soldiers," was trending.⁶ While numerous genuine commentators tweeted about the hashtag, it was also heavily promoted by bots. In addition, the news of the reduction in benefits to Qatari soldiers was unsubstantiated. The trend was traced back to a questionable tweet posted by a Twitter account ostensibly based in Egypt (see Figure 5).

⁵ The Arabic acronym *Daesh* is used here because it was the term evident in the propaganda examined. The term is the transliterated acronym of Dawla Islamiyya al-Iraq w al-Sham (the Islamic State of Iraq and Syria). This term is often deployed pejoratively, relating to the Arabic *dahas* (to crush/run over) or *daas* (run over/run down).

⁶ This hashtag has since been deleted from the original BBC story, although it is still visible in the cached data and on BBC's Facebook page.



Figure 5. Tweet containing a screenshot of a fake Reuters article.

The account shared a superficially legitimate screenshot of a Reuters article with the title “Qatari Government Reduces Public Salary Index by 35% as a Result of the Four Arab Nation Boycott.” Although at first glance the screenshot looks like a genuine Reuters article, the story did not exist on the Reuters website. Closer inspection shows poor capitalization in the headline. This could be classed as an imposter (the impersonating of genuine sources) and a form of manipulated content (Wardle 2017). The purpose of the trend is unclear, although it could be an attempt to lower morale in Qatar and exaggerate the impact that the blockade was having, especially at a time when Gulf countries are conscious of implementing economic cutbacks. The fact that the hashtag was picked up by BBC Trending points to the utility of bots in projecting fake news content beyond the bounds of Twitter.

On January 12 and 13, the most popular trend in Qatar was the hashtag “Our hearts are with Tamim but not the two Hamads.” The “two Hamads” refers to “Hamad bin Khalifa al-Thani and his confidant and long-term ally, Prime Minister Hamad bin Jassim al-Thani” (Roberts, 2017, para. 5). The word *Hamadayn* (Arabic grammatical construct meaning “two Hamads”) is often used pejoratively by critics of Qatar and is a recurring element of the discourses surrounding Qatar. As Simon Henderson (2017) notes, “Hamad’s antagonistic relationship with his Arab neighbours extends to the first days of his rule. After he pushed his own father to the side in 1995, the Saudis and Emiratis, with some Bahraini involvement, tried to organize a counter-coup” (para. 7). Thus, in the context of the Gulf crisis, the hashtag is clearly a criticism.

An analysis of the hashtag shows a large spike in account creation in April 2017, when more than 485 accounts were created. Of these, 463 were created on the same day: April 2, 2017.

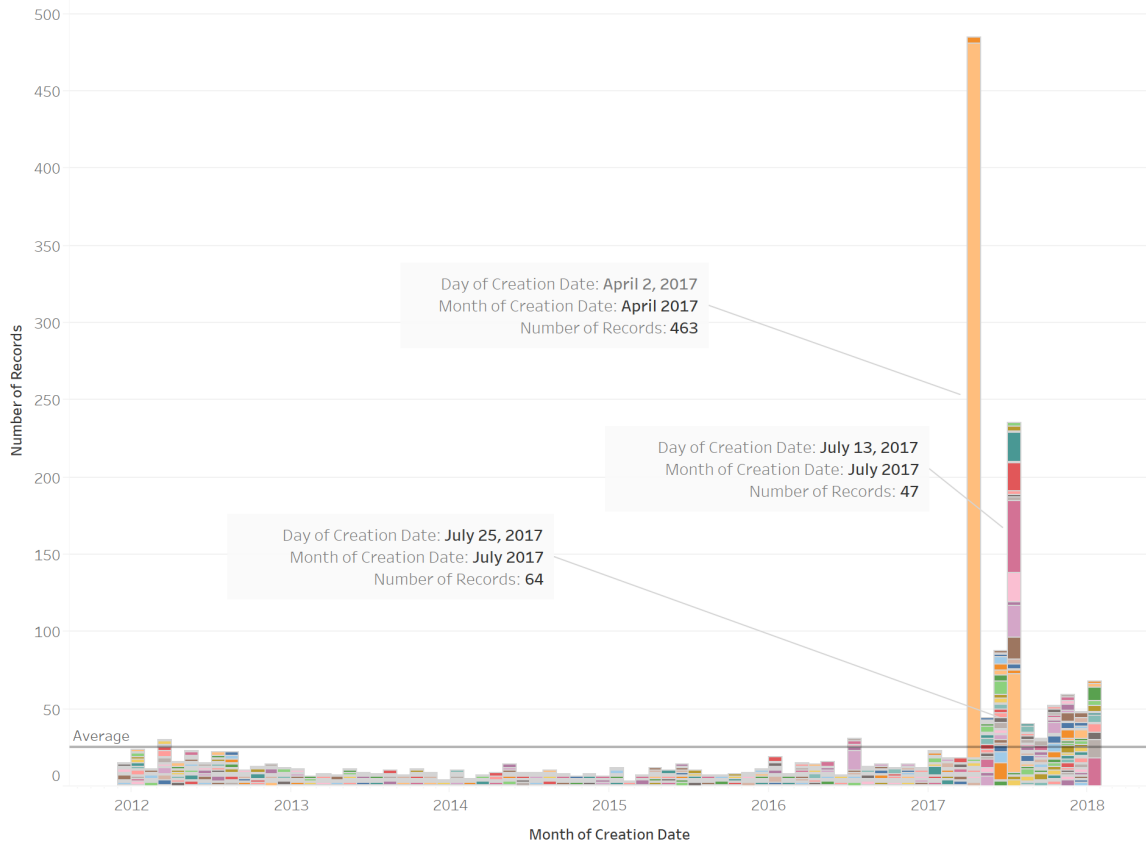


Figure 6. Accounts mentioning the hashtag #قلوبنا مع تميم لا الحمدين (Our hearts are with Tamim but not the two Hamads) by month and year of creation, sampled January 12, 2018.

What is interesting about this hashtag is that the bots were designed to appear as if they were Qatari vox pops—informal comments by genuine members of the Qatari public. The tree map shown in Figure 7 illustrates the proportion of accounts, calculated by their input location on their profile.



Figure 7. Location of accounts tweeting on the hashtag "Our hearts are with Tamim but not the two Hamads."

Most are from Qatar, closely followed by Saudi Arabia. The fact that many of the bots are tweeting from Qatar will likely impact Twitter's trending algorithm to show that this hashtag is trending in Qatar. The fact that the hashtag was trending in Qatar was used by critics of Qatar to demonstrate Qatari opposition to the "two Hamads." The tweet shown in Figure 8, from the account Mulaak Mohammed/@Ho213De (2018), states "praise be to God there is consciousness among some Qataris; they are starting to understand the scum that is the two Hamads."

To try and prove his point, Mohammed (2018) provides a number of screenshots of the Twitter accounts tweeting on the bot-driven hashtag, circling the locations "Qatar," as if to emphasize that it is indeed Qataris harboring these opinions. However, the accounts used by Mohammed as evidence to support Qatari opposition to the two Hamads are all bots. They do not represent genuine grassroots voices.



Figure 8. Tweet from an account seeking to highlight Qatar’s opposition to the two Hamads by circling the locations of Twitter users (bots).

Bots and Coup-Bating

Saud al-Qahtani was an advisor to the royal court and general supervisor of the Center for Studies and Information Affairs (at the time of writing).⁷ He used similarly manipulated trends in Qatar to indirectly threaten the Qatari authorities and engage in coup-bating (the use of propaganda to encourage regime change). On August 21, 2017, al-Qahtani (2017b) tweeted "The top trend in Qatar now is #LeaveTamim."⁸ With this tweet, al-Qahtani included a screenshot of Twitter's trending topics, as if to alleviate any doubt about the veracity of his statement (see Figure 9).



Figure 9. Tweet by Saud al-Qahtani showing a screenshot of top trends in Qatar.

⁷ Al-Qahtani was demoted following his alleged role in the murder of journalist Jamal Khashoggi.

⁸ The original Arabic hashtag was #ارحل_ياتمim (Leave Tamim).

However, an analysis of the #LeaveTamim hashtag highlights that not only were many of the accounts bots but also the majority of the accounts were located in Saudi Arabia, according to their user input location. Al-Qahtani then retweeted the results of a Twitter poll by an anti-Qatar Twitter user. The poll asked Qataris what they wanted to do about Tamim. The results in the poll indicate that the majority wanted Tamim to go. After al-Qahtani shared this poll, which he intimated reflected the popular will of Qataris (despite no transparency about who voted), he offered a veiled threat, indicating that any attempt to quell popular insurrection by Qataris would be met with force: "Qatar (Gaddafi of the Gulf) should know that any attempt to repress a peaceful movement of the brotherly Qatari people by foreign forces shall be punished severely, it is a war crime" (al-Qahtani, 2017a).⁹

Both Saud Al-Qahtani and @Ho213De illustrate how bots are used to fabricate evidence of popular hostility to the Qatari regime among ordinary Qataris. What this equates to is a digital rent-a-crowd, except the crowds are automatons, not people.

Twitter Bots in the Gulf Crisis: The Modalities of Operation

During the Gulf crisis, Twitter was heavily utilized as a tool for the delivery of misinformation by propagandists—misinformation that largely reflected the views of the Quartet. The following modalities have been highlighted:

- The use of Twitter bots in the Gulf is highly prevalent and occurred frequently and voluminously throughout the crisis. On some hashtags, at least 71% of the active accounts were found to be bots.
- Most of the bots in the Gulf crisis were deployed to disseminate propaganda reflecting the Quartet's demands of Qatar.
- Bots were used to manipulate Twitter trends in the Gulf.
- Bots and the trends they generated were exploited by certain commentators in an attempt to create an illusion of anti-Qatari government sentiment (as opposed to anti-Qatari sentiment) among Qataris.
- Bot-generated trends were sometimes picked up by other news sources, thus increasing the impact and reach of the propaganda.
- Twitter bots helped generate the pretext of the hack and legitimize the demands of the Quartet.
- Doctored news and bot-generated propaganda trends can generate discourses that would not have existed before, thus influencing subsequent discussions by real people.

By focusing on the Gulf region, this work complements the growing body of literature on the role of social media, propaganda, and political communication in the Middle East and across the world. It will also be useful to scholars of propaganda and social media seeking to gain empirical insights into regional

⁹ Calling Qatar the "Gaddafi of the Gulf" was not uncommon by its detractors and is a derogatory reference to Colonel Mu'ammarr Gadhafi, the former Libyan head of state.

case studies. For future research, it is necessary to conduct further studies on the detection of bots and the nature of their instrumentalization. Collaboration between regional experts and more parochial studies could yield important commonalities in terms of bot behaviors, their provenance, and their impact. Certainly, with regard to provenance, identification is key. As Ferrara et al. (2014) have argued, we must attempt to locate the puppet masters. That is, it is important to identify the organizations or individuals who actually run such operations.

Although it is difficult to determine exactly who is behind the bots in this particular study, the manifest content mirrored the demands of the Quartet. Indeed, it is also striking that such a large bot network, which became active at the outbreak of the crisis, was created so soon before the pretext. Perhaps more alarmingly, this study reveals the prevalence of malicious bots that masquerade as real citizens in the Arabic-speaking world. As I have argued in a previous study:

What these bot armies represent is not an organic outpouring of genuine public anger at Qatar or Thani, but rather an orchestrated and organized campaign designed to raise the prominence of a particular idea. In the case of these bots, the intent appears to be legitimizing the discourse that Qatar is a supporter of terrorism by creating the misleading impression of a popular groundswell of opinion. (Jones, 2017a, para. 11)

With increasing evidence of the weaponization of social media, urgent work needs to be done to explore the relationship of individual SNS companies with regimes and governments, especially those that are known violators of human rights. The presence of large volumes of bots in the Gulf raises questions about particular forms of propaganda and whether the presence of bots is facilitated by opaque and bespoke agreements enacted between SNS companies and specific governments for the pursuit of either profit or propaganda. While metadata and the content of the tweets can offer important clues about who pulls the strings, the difficult yet important quest to find the puppet masters will involve a close examination of the relationships between organizations, governments, and individuals. Despite the crudeness of many of these bots, deploying them in large numbers will likely continue to influence the dissemination, uptake, and reach of propaganda. Until Twitter changes its algorithm, the "algorithmic push of intensity over quality" may result in short-term trend-gaming (Dijck, 2013, p. 77). Thus, trends in the Gulf region and online ad hoc publics may continue to be dominated by entities that have the resources to create or pay for bot-led propaganda campaigns. These will inevitably continue to compromise the integrity of the Gulf's online public sphere.

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